THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, OCTOBER 19, 1876. No. 27.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Boiled Down.

Humboldt elevator is finished.

Emporia Fair had bottled hoppers.

Jackson county warrants are at par.

Osborne City has an 87-mice-a-day cat.

Cowley county grass twelve feet high.

Wild geese and cranes are flying south.

Fort Scott pays one dollar for castor beans.

St. Mary's pays twenty-five cents for corn.

Allen county has a twelve-pound sweet-potato.

The largest cotton crop this year since the war.

Grass-squirtuses hatching out in Arkansas valley.

Immigrants from Minnesota rolling through Topeka.

Last week gold reached its lowest point in fourteen years.

Several parties want to borrow overcoats for a few months.

The Blue Rapids plaster, flour, paper and woolen mills all busy.

Kansans registered at the Centennial to the number of 3,640.

Coffeyville expects to ship 25,000 head of Texas cattle this fall.

Ten trains of immigrants passed through Fort Scott in one day.

Ottawa brags over a pippin apple weighing one and a half pounds.

The Kansas wagon has taken a premium at the Centennial Exhibition.

G-hoppers in central Texas as thick as they ever were in Egypt.

All the well-to-do and sensible citizens of Iowa are emigrating to Kansas.

The Saline Valley Register reports the second-sowed wheat looking well.

The Western Union Telegraph Company only cleared $3,339,510 last year.

Osborne county people have organized to exterminate the hopper-squirtus.

Five beds of gypsum, one of them 32 feet thick, underlie Sabetha; also, coal.

The Inland Tribune has a linen duster and straw hat to trade for a stove.

The Burlingame cheese factory on Sept. 1st had made 75,660 pounds of cheese.

Cottonwood cuttings planted by Osborne City farmer made seven feet growth.

Sumner, Cowley, Butler and Sedgwick have a larger acreage of wheat than last year.

Saline county farmers claim that there is more money in raising broom-corn than wheat.

Sumner county proposes a compulsory fire guard law, with penalty of $25 and imprisonment.

Very early and heavy snows in Colorado; which means plenty of rain in Kansas next season.

G. E. Beates, of Junction, and five men threshed chills out of wet wheat and all stopped to shake.

Some more Russians, a colony from Ohio and another from Tennessee, settle at Baxter Springs.

A Kansas woman took the premium for best bread at St. Joe. Fair out of the hands of 100 competitors.

Ten years ago Russia exported half the wheat used in England, and America exported one-eighth. Now America furnishes half and Russia only one-fifth.

The Hays Sentinel holds that its immediate neighbors cast a shade of suspicion over that office when they build high board fences around their wood-piles.

How to Do It.

We have a proposition to make in regard to the State educational institutions. There are three of these institutions that the State ought to keep in good shape. It is a matter of public interest and State pride to make them first-class. We allude to the State University, the Agricultural College and the State Normal School. These three institutions have an endowment of lands, and the State has erected good buildings and spent hundreds of thousands of dollars in their support. The State is just beginning to reap the benefit of its expenditures. And we suppose no one will take ground in favor of discontinuing these schools. The proposition we have to make is that a bill be passed next winter levying a tax of one-third of one mill for the support of these institutions. This levy would raise about $45,000, which, properly divided, would run these in good shape. It will be remembered the Agricultural College has an income of $18,000. The adoption of this plan would forever put a stop to the cry of "State institution ring" which we hear every winter. It would relieve them of the humiliating fights they have to go through every winter. It would give them a degree of confidence among the people they have never enjoyed, and would put them upon a basis of permanence. Only last winter Wisconsin did this very thing in regard to her State University, and the people there now believe their institution is on the sure road to prosperity. It ought to be provided that as fast as the lands of the University and Normal are sold levy should be decreased.

We trust that it will not be many years until they can get along without asking a cent from the State treasury. We believe the adoption of this plan would be a great saving to the State. It would certainly be a great saving in the time of future legislatures, and would remove vexed questions from before that body. The schools could go right ahead with their work from year to year, and would not have to depend on the actions of those who have "axes to grind;" and the boards of regents and teachers would not have to be in a perpetual stew as to what the probable action of the next Legislature would be.

Our common school fund is getting uncommonly large, and one-third of the mill annually levied for that fund could be easily spared for the purpose above stated, and thus the levy would not be increased. This year part of the suggestion might not be very popular, but the money could be easily spared from the common school fund, and would do vastly more good than now. We merely throw out the above suggestion now, and may have something farther to say about it.—[Emporia News.

No young man has talents, abilities or education beyond what may be used on a model farm. To the educated young farmer is open an honorable career, and a promise of wealth more bright and more sure than any other calling offers.— [Ex.

A Sensible Suggestion.

The Emporia News makes an important and very sensible suggestion, in an article which we quote elsewhere, as to a plan for raising the revenue for our State educational institutions. It is simply that instead of appropriations being made each year, involving a fight and a wrangle at every session of the Legislature, a bill be passed appropriating to these institutions the proceeds of a light tax of one-third of a mill,—the levy to be decreased as the permanent endowment funds are increased by the proceeds of the sales of the lands belonging to the various institutions. This plan would be infinitely superior to the present method, which is about as bad as it can be. Now, those members of the Legislature who are so unfortunate as to represent the localities where these institutions are situated, are placed in the most embarrassing and annoying position. Their independence upon all topics of legislation is hampered by the necessity they are supposed to be under of securing appropriations for these institutions. The State is insensibly taught to look upon the schools themselves not as State institutions for which the whole State is responsible and in which it is interested, but as local institutions belonging somehow to the people where they are situated. Nothing could be more unfortunate for the institutions, or for the State itself. The plan proposed by the News has been adopted, as it says, in Wisconsin for her University, and was long ago adopted in Michigan for her splendid State University.

From present prospects our Legislature this winter will be comprised to an unusual extent of our ablest and most experienced men. The appropriations will necessarily be made for two years, and we are not without hope that this whole question of the relation of the State to its higher educational institutions will be discussed and settled upon a permanent and liberal basis.—[Lawrence Journal.

THE New York Tribune observes that American business men are prompt to act on hints, and that in several departments of trade they are already taking advantage of those given them by the Centennial Exhibition. "This is notably the case with the paper manufacturers. The falling off in the imports of paper does not seem to have awakened them to the fact of the superiority of American papers, until a comparison of exhibits was made at Philadelphia. it is now discovered that American manufacturers of this article rank with those of other nations, particularly in the finer varieties, a result due to competition and the high code of morality that prevails among American manufacturers. The revelation has already led to organized effort to develop the foreign trade, and obtain a footing in all the great markets of the world. The success seems to be assured by the excellence of the American papers and the advantages this country now enjoys of manufacturing cheaply."

THE INDUSTRIALIST.

THURSDAY, OCTOBER 19, 1876.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

PERSONS desiring the latest information regarding the Agricultural College, should send for a copy of the twelve-page circular just issued.

PROF. C. V. RILEY has been appointed by Gov. Hardin as the delegate of Missouri to the conference of Governors which meets at Omaha to consider the locust question. In view of this fact, Prof. Riley's lectures at the Agricultural College will begin Monday, October 30th, instead of the 23d, as announced last week.

IN another column will be found an article from the Emporia News proposing a new mode of raising the funds given by the State to the Emporia Normal School, the University and Agricultural College. Also, an article from the Lawrence Journal strongly endorsing the plan. As it is the most important suggestion which has been made upon this subject for a long while, we present it to our readers with the simple remark that the proposition to take this sum from the common school fund does not strike us as just the right thing.

AT the late Fair held in Manhattan, we had the pleasure of meeting a number of the well-to-do stockmen of the State; and it occurred to us that the exclusive grain-growers, and especially our herd law friends, might have profited immensely by the conversation of these men. In the first place, they are not talking of leaving the State on account of the grasshoppers. They spoke and acted like fixtures; nor were they dreading the appearance of the grasshoppers next spring. On the contrary, they seemed to care nothing about them. Grasshoppers don't eat their crops. Grasshoppers and drought combined cannot seriously embarrass the stockman, for come what may prairie grass is certain to grow. It is true that high prices for stock do not prevail, but three-year-olds at $30 to $35 are quite as profitable as wheat at sixty-five cents and corn at twenty.— [Prof. Shelton.

THE Farm Department has recently made, by purchase, some valuable additions to its live stock. This purchase consists of two Shorthorn cows, a heifer and her dam, aged respectively four and six years. These were obtained of Mr. Collin Cameron, Maple Hill, Kansas, who obtained the elder cow of the great Canadian breeder and importer, M. H. Cochrane, Compton, P. Q. Both animals are regular breeders and perfectly healthy, though somewhat thin in flesh. That they are very nicely bred a brief glance at the pedigree of the elder will show.

MAID OF DARTMOUTH.—Vol. 11th. Roan; bred by M. H. Cochrane, Compton, P. Q.; calved June 5th, 1870.

Got by Imported Gen. Napier (26239)
1 dam, Cambridge 4th...by the Moreton Duke, 5225
2 dam, Cambridge.....by 3d Grand Duke (17993)
3 dam, Imp. Cherry Pie, by Lord of North, (11743)
4 dam, Celia, by 3d Duke of Northumberland (3647)

The pedigree, of which the above is a part, is a noted one, the individuals of it having been bred by the very best breeders in England and America. Gen. Napier, the sire of Maid of Dartmouth, was from the famous herd of Wm. Torr, of England, and had six consecutive crosses of the best Booth bulls that ever lived; his sire being Lord Blithe, own brother to the renowned cow, Lady Fragrant. Imported Cherry Pie was bred by Jonas Webb, Babraham, England, one of the most noted breeders in England.

The heifer was got by Nimrod, 12499; he by Star of the Realm, a pure Booth bull and the sire of the famous Breastplate, his dam being a cow of the noted Nannie Williams family.— [Prof. Shelton.

EDITORS INDUSTRIALIST:—On reading the title of the enclosed article, your first impression will be, and very naturally, that I intend to be personal. You will discover, however, on investigation, that I make no reference to that variety of the same species, that by some inscrutable dispensation of Providence is sometimes elevated to the editorial chair, and uses its position to force contributions from "rustic simplicity" and "presiding elders." I am somewhat familiar with the variety, (although never having raised any, I have been raised by them,) and I may take occasion, at some future time, to single out a few individual specimens and "analyze" them for the edification of your readers. I will only say at this time that you seldom find a specimen of that variety that runs much to head. Although I have in my mind's eye one or two specimens that deserve to have a "head put on 'em."

If I am left to the quiet seclusion of rural life which I so much covet in my old age, and am let "severely alone" by the editors of the INDUSTRIALIST, it may be better for all concerned. Prof. Huxley, Josh Billings, or some other eminent searcher after "fossil foot-prints" and "missing links," has wisely said "that you should never undertake to pull a bumble-bee up by the roots, unless he was actually sitting on you." You can make the application.

Truly Yours,
B. L. KINGSBURY.

The Cabbage-Head.

Every one knows the cabbage; yet how few of those who grow or eat cabbage know how it grows in its native localities. Whether it heads as with us; whether it is a biennial, annual or perennial; we presume not one farmer in a thousand can answer. The cabbage grows naturally in various parts of Europe, usually on the chalky cliffs by the sea-side. There it makes a stem about three-fourths of an inch in diameter, with no signs of a head. Its flowers appear in June. The seeds ripen, fall and grow immediately. Early the next spring the plant pushes up its flower-stems, blooms, matures its seed and dies. Its life being but twelve months it may be called an annual, but botanically it is a biennial—being produced one year and living over to the next.

The question now occurs, Why and how is it that a cabbage heads with us? No matter how large or solid the cabbage-head from which we save seed, if we sow the seed immediately, that is in July when it ripens, we will get no head the next year, but the plant will run to seed as naturally as in its native locality. By saving the seed for some months beyond the natural growing season of the plant before sowing, we afford to the plant the best season of the year for developing its flowers. This is an auxiliary in the formation of the head. We find, also, that there is an inherent capacity in all plants for storing up plant food for future use; in biennials and perennials we find it in the thickened root, in bulbs, tubers, etc.; also in the buds on our trees. Nature always prepares for the future, and then takes a period of rest more or less extended; then follows a period of rapid growth. The buds on our trees this fall are only small heads, and a cabbage-head is only a large terminal bud. We sow our cabbage-seed in the fall or spring, some months after the natural time; after growing for a certain period it begins to form its terminal bud or head, starchy matter accumulates, and other compounds are elaborated; the axis of growth is shortened, the inside leaves become bleached from exclusion from light, and we have a hard, solid bud or head. Set this head out next spring, and the same process takes place in the cabbage as in the bursting of the buds on our trees; the axis elongates rapidly, inflorescence takes place, the material stored up the previous year is consumed in producing flowers and seed, and our cabbage finally becomes flaccid and exhausted. Thus we see that the bud and the head go through the same process under different conditions of growth.

THE following shows the average price for one hundred pounds of wheat, for ten years, in the Liverpool market. As the price in England generally determines the price in this country, the average range would doubtless be the same here: January, $2.90; February, $2.80; March, $2.78; April, $2.78; May, $2.77; June, $2.77; July, $2.73; August, $2.81; September, $2.60; October, $2.95; November, $2.95; December, $2.64.—[Lawrence Journal.

THE INDUSTRIALIST.

THURSDAY, OCTOBER 19, 1876.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:40 A. M.
Going West..... 3:52 P. M.

FREIGHT ARRIVES.

Going East..... 12:20 A. M., and 11:35 P. M.
Going West..... 5:15 A. M. and 5:45 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER, Agent.

Number of students enrolled this term, **167.**

We are authorized to announce W. C. Stewart as the next candidate for matrimonial honors. "One by one the roses fade."

The Websters and Alpha Betas hold a joint session to-morrow afternoon. A literary feast may be looked for by those who attend.

A neat programme frame hangs in the hall of the mechanical building. In it is placed the programme of exercises to be followed at each meeting of the Alpha Beta Society.

Our devil has just unearthed from the three-em space-box that indentical nonpareil period upon which a gentle Caloptenus darnus was lately reported to have choked to death. Telegraph to Barnum.

In behalf of the forty members in the printing classes, we return thanks to Mr. and Mrs. George Gale for a nice wedding cake. This was one of the practical lessons in printing to which the students did not object.

The Farm Department has recently made stock sales as follows: Wm. P. Higinbotham, Manhattan, one Devon cow; J. Lawrence, Beloit, Kas., one pair Essex pigs; J. Smercheck, Blue Rapids, Kas., one Berkshire boar pig.

Hon. Welcome Wells gathers 4,000 bushels of superb apples from his orchard this season, which will net him more than half the sum for which he offered his whole farm last year. He will please accept our thanks for a supply of his choicest varieties.

New arrivals are in order, and this time it's the Berkshires. Something like fourteen little four-footed squealers saw the sunlight for the first time last week. A majority of these, we are told, are very valuable, being the offspring of the famous imported Lord Liverpool.

To Major N. A. Adams we are indebted for a fine sample of Australian wheat, from the great Centennial. We have often seen the products of the famous wheat fields of Colorado, California and Oregon, but never before have we seen anything quite equal to this sample from the antipodes.

A few days ago we finished harvesting two hundred and thirty odd sorts of potatoes. Of each of the two hundred and thirty sorts, obtained from Michigan, a single potato was planted; and the difference in the yield was most striking. We noticed that two sorts, each marked "Kansas," gave very large if not the largest return.

The Wedding.

The marriage of Mr. George A. Gale to Miss Melva Sikes did not create much of a stir in the social circle of this vicinity. We had all settled down to the belief that soon George and Melva would unite their fortunes, but just when the event would occur was simply a matter of conjecture. Finally, it was announced by printed invitations that the wedding would take place on Friday evening, Oct. 13th; and on the morning of that day the bridegroom's parents and intimate friends departed for the home of the bride in Vienna, Pottawatomie county.

At half-past eight o'clock that evening, in the presence of a goodly number of relatives and friends, the solemn and imposing ceremony was performed, Rev. L. E. Sikes officiating, and Mr. Wm. Zimmerman and Miss Flora Benedict acting as attendants. The parlor was profusely decorated with evergreens, flowers and appropriate inscriptions; the fair bride looked the loveliest of all the lovely, dressed in white—that emblem of purity and innocence; while the handsome bridegroom looked serenely happy as he led his beau ideal to the hymeneal altar. Altogether, we frankly declare it the most beautiful and impressive marriage ceremony we ever witnessed. Many words of hope and advice were offered to the newly wedded as they thus launched out together in life, fearlessly to encounter and successfully we trust to battle all the foes of peace, prosperity and happiness.

On Monday evening, a reception was given at the house of the bridegroom's parents, in Manhattan. What a plsasant and joyful gathering! Here were the parents of both the bride and groom, spared to partake in the nuptials of those whom they have loved, cherished and educated; and to whose respective futures the parents of each have looked forward with much hope and anxiety. What tends so much to strengthen parents and make them happy in their declining years as to see their children safely through this most eventful period of one's life. The professors and some of the students, with whom Mr. and Mrs. Gale had associated for so long in the various relations of College life, still manifested an interest in these persons, and greeted them with open hands, warm hearts, and an earnest desire for their well-being.

But space will not permit us to extend our report of this wedding. George and Melva, as we familiarly call them, have been very kindly and substantially remembered in the way of gifts from their numerous friends; they start on life's ocean with hardly a cloud in sight, or an ugly breaker in view; and we are confident we only pronounce the sentiments of all their acquaintances when bid them God-speed.

Students' Column.

The Websters enjoyed their moot-court last Saturday evening highly. They elect new officers next Saturday evening.

"Old Student" uses invectives quite freely. He will squeal still louder, no doubt, when we hit him again. Since reading his communication, we do remember that the Alpha Betas had some kind of an exercise which they called mock court, and it is so recorded in their books. The Websters, being well acquainted with the manner in which moot-courts were conducted in law schools, introduced them as an exercise in their Society. Afterwards, the Alpha Betas held moot-courts instead of mock courts.

The Websters have not "officially announced that they will admit ladies." Something was said, jestingly, about lady petitioners; but every body knows that the Webster Society is for gentlemen exclusively.

"Why could they not challenge the Alpha Betas to public debate?" That is truly diverting to old Websters. Why, sir, they did challenge you two years ago and you quibbled out of it; and this is the first intimation they have had that you desired a public contest.

The statement that the Webster is the largest Society and the fact that nine constituted a three-fourths vote at one meeting, are not incompatible. A Webster has a certain duty the non-performance of which debars him from voting. Many of the members, from carelessness, neglected to perform that duty; and on the evening referred to by "Old Student" only eleven members had full privileges; but since that time many have settled up and they will now outnumber the Alpha Betas.

JED.

Weary of the monotonous round of life, a party of nine sought respite by having a picnic in the woods. That time might pass more pleasantly, they were provided with conveniences for gathering walnuts when not otherwise employed. In short, they went nutting. Perhaps it would sound more poetic to state that our party resorted to the grand old forest while it is losing its emerald hue; that the falling of leaves and the solemn music of the wind playing through the naked branches enchanted these lovers of nature; and that while thus enraptured they gathered chestnuts, beechnuts, winter-greens, etc. But our party live in Kansas; the forests are scarce and the chestnuts are not remarkably plenty, so they went after walnuts and—a good time.

They found both. The walnuts were in great abundance. After picking with a will until becoming tired, some one inquired the hour. It was immediately and unanimously voted that it was "dinner time." The ladies, who were taken along solely for that purpose, then spread a bountiful repast which, it is needless to say, was enjoyed by all. We won't tell all that we thought just then; but we remember saying to ourselves: "O, pshaw, their mother's did the work, of course."

It would consume too much space to recount the various incidents of the day; but they gathered a wagon load of nuts, and had the usual "poetry" of such trips in getting that load through the mud-holes. These petty annoyances only serve as a background to the pleasures which precede. All returned with a wish that sometime in the future, another day might be spent as pleasantly in that same grove.

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MARRIED.

GALE—SIKES—At the residence of the bride's parents, in Vienna, Pottawatomie Co,, Kansas, on Friday evening, October 13th, 1876, by Rev. L. E. Sikes, MR. GEORGE A. GALE, of Milford, Kas., and MISS MELVA E. SIKES.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Record, Frankfort. $1.50 a year. Campbell Bros., Publishers. 14-1m

Telegraph, Waterville. $2 a year. W. P. Campbell, Publisher. 14-1m

Star, Hays City. A Republican paper published weekly by J. H. Downing. 16-1m

Independent, Oxford. Terms, $2 per annum. Republican in politics. John Blevins, Editor and Proprietor. 14-1m

Courier, Columbus. Leading paper in Cherokee county. Politically, Republican. S. O. McDowell, Editor and Proprietor. 14-1m

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-1m

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

Herald, Chetopa. The official paper of Labette county. Republican; $2 per annum. Published by J. H. Hibbetts & Co. 16-1m

Press, Girard. Established 1869. Official paper of county and city. Republican in politics. Wasser & Riddle, Editors and Proprietors. 22-1m.

News, Peru. F. G. Moore & Co., Publishers and Proprietors. $1.50 per year. A newsy sheet published in the interests of Chautauqua county. 22-1m

Herald, Florence. A wide-awake, local paper devoted to the interests of Florence and vicinity. Terms, $1.50. Howe & Morgan, Publishers. 14-1m

Empire, Concordia. Leading paper of Cloud county. A readable, reliable, Republican journal. $1.50 per year. H. E. Smith, Editor and Proprietor. 14-1m

Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-1m

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Times, Dodge City. All the Texas cattle news. Published at the "Long-Horn Metropolis." $2.00, in advance. Six months, $1.00. W. C. Shinn, Proprietor.

Courier, Independence. Daily and weekly. The only daily in southern Kansas. Daily, $5; weekly, $1. Chock full of news. Try it. J. J. Chatham, Editor and Proprietor. 14-1m

Monitor, Jewell Centre, $1.50 a year. A 24-column weekly devoted to the interests of Jewell county. Official paper of the county. Byron J. Thompson, Editor and Proprietor. 14

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Times, Lyndon. A spicy, local newspaper devoted to the interests of Lyndon and Osage county. Independently independent in politics. Terms, $1.50. Miller Bros., Editors and Proprietors. 14-1m

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application.

Telegraphy.—Four miles of line, twenty-five line instruments, and daily instruction and drill by an experienced operator.

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Standard Stock! Standard Work!! Standard Prices!!! Anything in the line of Printing and binding done as well as any where in America, at the Kansas Publishing House, Topeka.

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Kansas Publishing House.—Standard Stock, Standard Work, Standard Prices, to be had at the Bindery and Blank Book Manufactory of George W. Martin, Topeka, Kansas. Orders from counties and townships solicited. All sorts of books made, bound and rebound. Legal Blanks, Seals, Stationery and Job Printing.

English Language.—The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive. Drill in English, History of English, Structure of English, Study of Words, and Rhetoric. Constant practice in the class room, and, if desired, at the printer's cases.

Mathematics.—Practical, direct and thorough drill in Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics and Engineering. Work in Field, with Tape Line, Chain, Compasses, Transit and Level. The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

The Annals of Kansas.—By Daniel W. Wilder, now ready for delivery. This book contains 691 pages. It is a Kansas Dictionary. It has double the amount of reading matter contained in Sherman's Memoirs, and three times as much as the thirteenth volume Kansas Supreme Court Reports. Price, postage prepaid, $5.00. Orders solicited. Cash must accompany each order.
30-tf GEO. W. MARTIN. Publisher.

Special for Woman.—Special lectures on Farm Economy, by Prof. Shelton, discussing the Dairy, Poultry, etc. Gardening, by Prof. Gale, treating of the vegetable, flower, commercial and ornamental. Household Chemistry, by Prof. Kedzie, consisting of the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc. Special Hygiene, by Mrs. Cripps.

County and District Official School Record Books, by Prof. S. A. Felter. Conforming strictly to the Revised School Law of the State of Kansas, the recommendations of the National Teachers' Association, and the requirements of the National Bureau of Education, of Washington, D. C. Approved by the State Superintendent of Public Instruction. Manufactured exclusively by the Kansas Publishing House, Topeka.

Printing!—Daily instruction and drill in the work of a First-Class Printer. The Literary Departments offer a thorough education in the construction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping; and in Industrial Drawing, as the best developer of that taste necessarily exercised by every good Job Printer. The Printing Department is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer. Besides regular class instruction in printing, the weekly publication of the INDUSTRIALIST by the Department furnishes advanced students the requisite drill in newspaper work.

KANSAS STATE AGRICULTURAL COLLEGE.

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FACULTY.

JNO. A. ANDERSON, Pres., Prof. Polit'l Economy.
M. L. WARD, Prof. Mathematics and English.
WM. K. KEDZIE, Prof. Chemistry and Physics.
E. M. SHELTON, Prof. Prac. Agricul., Sup't Farm.
E. GALE, Prof. Botany and Horticulture.
J. E. PLATT, Prof. Elem'y English, Mathematics.
C. V. RILEY, Lecturer on Entomology.
D. J. BREWER, Lecturer on Practical Law.
A. TODD, Sup't Mechanical Department.
A. A. STEWART, Sup't Printing Department.
W. C. STEWART, Sup't Telegraph Department.
MRS. M. E. CRIPPS, Sup't Sewing Department.
MRS. M. L. WARD, Teacher of German and French.
MRS. E. M. KEDZIE, Teacher Industrial Drawing.
MRS. H. V. WERDEN, Teacher of Inst'm'nl Music.
GEORGE H. FAILYER, Assistant in Chemistry.

THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial Pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; in Book-Keeping and Practical Law. Words, numbers and lines are the tools used by all industrialists in conveying or preserving ideas; and our endeavor is to make the student a ready workman in the art of using these tools for practical purposes, rather than to make him a critic of fancy English or a professor of abstract Mathematics.

FARMER'S COURSE.

Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the Structure, Growth, and Value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, in the Wood and Iron Shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

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To Mechanics, in addition to the studies of the Farmer's Course, applied Mathematics and Industrial Drawing are more extensively taught. Besides this literary education, the student is taught daily in the particular workshop of his trade. Special advantages are thus offered to those who wish an education as a Carpenter, Cabinet-maker, Wagon-maker, Blacksmith, Turner, Carver, Engraver, or Printer. No charge made for the use of tools or material for class practice.

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The course of study for woman is more practical, and, therefore, more sensible than that found in any other institution in the United States. The studies are shaped with reference to the liberal and direct education of woman as a woman instead of as a man, and as an industrialist instead of a butterfly. Among the special features of the course are Physiology and Special Hygiene, Household Economy, Farm Economy, Gardening, Household Chemistry, etc.

The workshops include those of the Milliner and Dress-maker, Printing, Telegraph, Scroll-Sawing, Carving, Engraving and Industrial Music.

Superior advantages are offered to students of higher Chemistry, to Mineralogists, Druggists, Operators, and Workers in metals.

Full collections of the Plants, Insects and Birds of Kansas, are being made as rapidly as possible.

☞ TUITION ABSOLUTELY FREE! ☜

No contingent fees, except for use of pianos and organs in the Musical Department; and a charge of $1.00 per month for material and instruments used by male students in Printing and Telegraph Departments. Boarding ranges from $2.75 to $4.00 per week.

CALENDAR:—Fall Term began Thursday, Aug. 24th, and will close Thursday, Dec. 21st, 1876.

For further information, apply to

J. A. ANDERSON, President.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, OCTOBER 26, 1876. No. 28.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Boiled Down.

Iron ore discovered in Ford county.

Morris county reports horse thieves.

Sabetha raised thirty car loads of flax.

English dog tax yielded £343,257 last year.

Atchison reports universal revival of business.

The Junction boot factory employs ten men.

Coffeyville ships hickory nuts by the car load.

The Ledger has a 101 pound Emporia pumpkin.

Immigrants from Virginia rushing into Kansas.

Sabetha shipped 300 steers averaging 1510 pounds.

Wilson county makes a large amount of native wine.

Clay Center shipped 611 car loads of produce last week.

Wyandotte is to have gas; this time for illumination.

Fall wheat coming up splendidly in Saline county.

Parsons handled 694 car loads of cattle in September.

Thirty bushels of apples from one tree at Burlington.

Osage City shipped eighty-four car loads of wheat in one day.

Col. Goss, of Neosho Falls, has two hundred specimens of birds.

A Smith county "bee" hauled 200 cords of stone for a church in one day.

A Washington county farmer raised 3,000 bushels small grain on 170 acres.

Total number of visitors at Centennial, 7,085,077; cash receipts, $3,286,122.

Supreme Court decides that a woman can hold office of County Superintendent.

Sweet-potatoes as big as a dry goods box, "as it were," according to the Champion.

When you shove a window up, it's cords of fun to take hold of the business end of a wasp.

Neither Hayes nor Tilden will be inaugurated on the 4th of next March. It comes on Sunday!

Forty-three wagons of immigrants from Iowa and Nebraska reported at Topeka last Thursday.

Hereafter, no letters will be returned by dead-letter office except those having valuable enclosures.

Belleville has a steam pump lifting ninety gallons of water per minute to quench the public thirst.

An osage orange sprout grew 12 feet 5 inches from May to October, at Wichita; 149 inches in 150 days.

Another Sumner county man harvested 27 bushels of wheat per acre weighing 65 per bushel. Early May.

The European war news created a Wall street panic and gold advanced four cents; getting down again, though.

An ampelopsis vine on the Junction City courthouse grew seven feet this season, its first after transplanting.

About every town in the State reports "no houses to rent," which indicates an early and strong immigration.

Concordia Empire reports the slaughter of 3,000 snakes, with as many more alive in a cave, and proposes a snake "bee."

Jackson county commissioners have issued a proclamation urging farmers not to burn the prairie grass. Sense, every time.

Woodson county has a cluster of sweet-potatoes, hanging on one stem, 36 inches in circumference and weighing 13¾ pounds. Next.

Origin, Breeding and Management of Berkshire Swine.

[Extracts from a Premium Essay by A. B. Allen.]

Tradition, and the earliest published accounts of what has long been particularly distinguished by the name of Berkshire Swine, represents them, down to about a century since, as among the largest breeds of England, weighing full grown from 700 to 1,000 pounds or more. The "Complete Grazier" describes one in 1807 as weighing 113 stone, (904 lbs.) This was exhibited, with others, by Sir William Curtis, at the cattle show of Lord Somerville, in that year. Johnson, in his "Farmers' Encyclopedia," London, 1842, says that they weighed at that time from 50 to 100 stone, (400 to 800 lbs.) The latter of these, doubtless, were of the improved breed.

Originally, they were represented as being generally of a buff, sandy or reddish-brown color, spotted with black, occasionally tawny or white spotted in the same manner. They were coarse in the bone; head rather large, with heavy flop ears; broad on the back; deep in the chest; flat sided, and long in the body; thick and heavy in both shoulders and hams; well let down in the twist; bristles and long curly hair, with rather short, strong legs. Their meat was better marbled than that of any other breed of swine in Great Britain—that is, had a greater proportion of lean freely intermixed with fine streaks of fat, which makes it much more tender and juicy than it would otherwise be. They were, consequently, from time immemorial preferred to all other swine there for choice hams, shoulders and bacon. They were slow feeders, and did not ordinarily mature till two and a half or three years old.

FORMATION OF IMPROVED BERKSHIRE SWINE.

Tradition tells us that this was made by a cross of the black or deep plum colored Siamese boar, on the old improved Berkshire sows.

Other traditions assert that the black and white spotted and even pure white Chinese boar was also sparingly used to assist in the same purpose. I can well believe this, for I often saw swine in Berkshire spotted—about half and half black and white,—in addition to the reddish brown or buff and black, and so on almost up to a pure plum color or black. The produce of the above cross or crosses was next bred together, and by judicious subsequent selections the improved breed, as we now find it, became in due time fixed and permanent in all its points.

Another feature, aside from the half and half black and white spots hitherto occasionally found to mark the improved Berkshire Swine, which may be adduced in support of the supposition of a sparing cross with the white and light spotted Chinese, is the shape of the jowls. All these which I have bred in my piggery, or imported at different times direct from China, or have seen elsewhere, had much fuller and fatter jowls than the Siamese. Some of the breeders in England preferred the fat jowls, because carrying the most meat; others the leaner, as they said this gave their stock a finer and higher bred look in the head.

WHEN WAS THE CROSS FIRST MADE?

Several aged men in different parts of Berkshire, of whom I inquired on my first visit to England in 1841, informed me that they had known there improved swine of the same type as I then found them from earliest childhood. But the most particular and apparently reliable account I was able to obtain was from Mr. Westbrook, of Pinckney Green, Bysham, who told me that his father possessed them as early as the year 1780, in as great perfection as the best then existing in the country. Thus it will be seen that the improvement is at least a century old, and more probably a century and a quarter; for it would have taken some years back of 1780 to begin a new breed of swine, and get it up to a fixed type at that period.

CHARACTERISTICS OF THE BEST OF THE IMPROVED BERKSHIRE SWINE AT THIS TIME.

Snout and head fine and rather short, but larger in proportion to the body in the male than in the female, and with a bolder and more determined expression; face dished and broad between the eyes; jowls full or thinner, according to the fancy of the breeder; eyes bright and expressive; ears small, thin and upright, or inclining their points a little forward; neck short, rather full in the throat, and harmoniously swelling to the shoulders; chest broad and deep; back broad and moderately arched; rump nearly level with it; well let down in the twist; body of good length and depth, round with well sprung ribs, and straight along the sides and under the belly; shoulders, above all, in the boar extra thick yet sloping smoothly to the body; hams broad, round, deep, and so thick through from side to side, particularly in the sow and barrow, that, standing directly behind, except when pretty fat, the sides of the body are scarcely seen between them and the shoulders; legs fine, strong, of moderate length, and set rather wide apart; feet small with clear, tough hoofs; tail slender and well set, with a handsome curl near the rump; bones fine and of an ivory-like grain and hardness; offal very light in comparison to weight of carcass; hair fine, soft and silky; no bristles, even on the boar; skin thin and mellow, with elastic handling of the flesh beneath; quick and spirited movement; stylish in carriage, and, in the boar more especially, bold and imposing in presence.

COLOR AND MARKING.

The mort favorite color among the best breeders in Berkshire, in 1841, was a deep rich plum, with a slight flecking on the body of white, or a little mingling with buff; a small blaze in the face; two to four feet white, and more less white hair in the tail. The plum color was preferred to the

[Concluded on fourth page.]

THE INDUSTRIALIST.

THURSDAY, OCTOBER 26, 1876.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

PROF. C. V. RILEY begins his lectures on Entomology, at the Agricultural College, Monday, Oct. 30th, 1876.

THE papers received by the INDUSTRIALIST are placed on file in the Reading Room for the benefit of our students, and are diligently read. We are thankful that a large majority of Kansas publishers exchange with us, and would be very glad to receive at least every weekly issued in the State. The quickest way of settling the matter would be for every editor who reads this item to "snip" it out and hand it to the mailing clerk, if he has one, with the direction to put the INDUSTRIALIST on his list, if it is not there already. We have students from nearly every county who always want their "home" paper. Admitting the fact that this is the smallest paper in the State, we nevertheless suggest that it has as much cheek as the largest; that, taking the year through, it presents Kansas matter worth as much as that offered by some exchanges.

Plants from our Own Forests.

For ornamental purposes, we are apt to discard our native plants. Some persons think them too common; others never look in the forest to see what can be found there. If we would only take the time to examine our forests at different seasons of the year, we should occasionally pick up a plant far more worthy of a place in the garden than many a costly exotic. We cannot boast of a long list of such plants; and yet we have a sufficient variety of trees, shrubs and creepers, if judiciously used, to make any home in Kansas "a thing of beauty."

It must be confessed that our importation of trees and shrubs has not always been a success. We have lost, and some of us lost largely; but we have learned some lessons; and one of these we hope is to see what of intrinsic beauty and merit there may be in our native plants. While we should not discard a hardy exotic, let us remember that there may be something as beautiful nearer home. What is more charming at this season of the year than the Burning Bush, Waahoo, or Strawberry tree? Its foliage is handsome; its branches are erect; its thick clusters of brilliant scarlet fruit, clinging far into the winter upon its naked branches, render it highly ornamental. The seed is produced in great profusion. The plants may be obtained in our immediate vicinity from the forest, or raised from layers or cuttings; or plants can be raised from the seed, which should be planted in autumn. While we have imported from both Europe and Asia plants belonging to the same tribe with our native Burning Bush, (Eunonymus)—only as a rule to have them die on our hands,—scarcely one in a thousand has noticed our own beautiful shrubs.

Another plant belonging to the same order, Celastrus scandens, (wax work, climbing bitter-sweet,) is found abundantly in our forests; and on account of its highly ornamental fruit is also worthy of cultivation. This is a vigorous climber which will grow fifteen or twenty feet high, and may be made very useful in covering arbors, walls, or trellis work, or may be trained to a pillar. It will do best in moist, shady situations. The foliage is of a deep green; the flowers make very little show, being small; and its chief attraction is its deep scarlet and orange colored fruit, which gives it the name of "wax work."

Too much can scarcely be said in favor of the Ampelopsis quinquefolia, (Virginia creeper.) While an imported variety is advertised as specially worthy of culture, it will be well for us to give more attention to our own native plant. While anything new has yet to be tested, we know this to be perfectly hardy. It recommends itself also by the rapidity of its growth, and by the luxuriance and beauty of its foliage. It can be made to cover walls forty or fifty feet high, clinging by suckers which grow out from the ends of the tendrils. The great variety and rich combinations of scarlet, crimson and purple which the leaves, stems and fruit assume in the autumn months, and the positions in which we see it on the trunks and branches of the trees, and on walls and porches, give it a prominent place among creepers. This climber is easily propagated by layers and cuttings, and can be gathered in almost any number from our forests. It is only necessary to distinguish it from the Rhustoxicodendron, (poison ivy or poison sumach) which has three leaflets, while the ampelopsis has five.—[Prof. Gale.

Better Stock for the General Farmer.

If by any means the farmers generally throughout the State could be induced to use, during the current season, none but pure-bred males in their flocks and herds, it is safe to say that the State would be the gainer in an amount greater than the sum total of all the damage done by grasshoppers in Kansas during the past three years. Everybody who has had the privilege of comparing the coarse, scrawny brutes—large in bone and offal and all the waste parts—called natives, with pure-bred animals of the same kind, must have thought of the vast difference between the farmer's opportunity and his realizations in this respect. We have within the past month seen high grade steers and heifers at three years old sell readily at thirty-five or forty dollars each, while in the same herd were "natives" of the same age, which had received precisely the same treatment, which no dealer, in his senses, would take at twenty-five dollars. Facts of this kind are familiar to every farmer, and they teach this lesson, that natives and grades, however superior, should never be allowed to do the honors of the herd.

We wish to go a step farther than to advise our farmers constantly to improve their herds. Not every farmer, perhaps, but certainly a large portion of them, ought to be breeders of pure-bred stock. This is a branch of "home manufacture" that has never been sufficiently brought before the people. It is an enterprise that raises no question as to its adaptability to the country, for the question of raising pure-bred stock in Kansas has long passed beyond the realm of experiment. It does not involve special legislation, the voting of bonds, or the formation of stock companies. It is one of those improvements that is within the reach of every farmer whose farm is paid for; and in point of profit no department of the farm can compare with the rearing of improved stock.

We have in mind a plain Illinois farmer who, in 1863 or thereabouts, invested $130 in a Shorthorn heifer. This animal died in 1872, and in 1873 her produce raised by this farmer fetched the magnificent sum of $11,000. Not every farmer may be thus successful in breeding pure-bred stock, but every considerable farmer, and every farmer making stock-raising a speciality, may with great profit keep one or more pure-bred females of the classes of stock he is most interested in. Farmers whose farms are not half paid for, think nothing of paying $200 to $300 for a reaper or harvester that they will not use two weeks in the year. Indeed, a large proportion of our farmers make it a point to keep up with the latest fancy in improved implements. But speak to these men about paying a few dollars extra for an animal possessing only valuable qualities and the ability to reproduce them, and they begin to talk of "fancy prices" and the inability of the "ordinary" farmer to keep such stock.

We are sending out of the State annually thousands of dollars for pure-bred bulls alone. Scarcely an important stock sale occurs in the East in which Kansans are not very prominent and spirited bidders. This ought not to be continued. Our farmers and stockmen owe it to themselves to see that this home demand is supplied by a home product.

Finally, stock breeding is the poetry of farm life; it makes the farmer an artist; it broadens out the farm work until the farm seems something better than a refractory brute, made to be scourged by the farmer's toil.—[Prof. Shelton.

THE INDUSTRIALIST.

THURSDAY, OCTOBER 26, 1876.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:40 A. M.
Going West..... 3:52 P. M.

FREIGHT ARRIVES.

Going East..... 12:20 A. M., and 11:35 P. M.
Going West..... 5:15 A. M. and 5:45 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER, Agent.

Number of students enrolled this term, **170.**

The Alpha Beta Society is preparing an entertainment which will be offered to the people of Manhattan about Thanksgiving.

Stock sales of Farm Department for the week: To C. A. Dow, Hartford, Coffey county, one pair of Berkshire pigs; M. M. Miller, Clay Center, one Berkshire boar pig.

Husking on the College farm went on at a lively rate on Saturday, despite the rain. Mr. Morgan reports 186 bushels of corn husked on that day by forty-eight hours of student labor with his own.

Since our last report the following persons have enrolled as students in this Institution: Lizzie R. Cox, Junction City, Davis county; Wm. A. Knipe, Manhattan, Riley county; John Lewin, Wakefield, Clay county.

Mr. L. V. Stewart, of Solomon City, who was so severely injured in a threshing-machine last summer, has been visiting his brother, our Superintendent of Telegraphy. Mr. Stewart is recovering from the effects of his injury,—although minus a foot in the operation—and will soon be able to resume his business.

Laboratory Notes.

During the past two weeks the class in Agricultural Chemistry has been conducting an exceedingly interesting series of mechanical analysis of farm soils, most of the samples being taken from the College farm. Of eight separate analyses in progress, four have been completed with the following results:

LOAM SOIL. NO. 1.

Analyzed by J. F. LaTourrette. Sample collected from a low, wet plat of ground:

Coarse sand	10.75 per cent.
Fine earth	40.77 " "
Impalpable matter	48.48 " "

OCHERY SOIL.

Analyzed by Geo. K. Davidson. Specimen collected near Eureka Lake; found in rock-like strata, and utterly destitute of vegetation:

Gravel	11.49 per cent.
Fine earth	85.63 " "
Impalpable matter	2.88 " "

SANDY SOIL.

Analyzed by M. F. Leasure. Sample taken from the pear orchard:

Coarse sand	1.88 per cent.
Fine earth and fine sand	93.98 " "
Impalpable matter	4.11 " "

CALCAREOUS OR LIME SOIL.

Analyzed by Irving Todd. Sample collected from a limestone bluff:

Coarse gravel	76.74 per cent.
Fine earth	12.32 " "
Impalpable matter	10.94 " "

In this work these gentlemen have followed essentially the method suggested by Johnson in his "How Crops Feed." The soil samples are carefully dried, weighed, and placed upon sieves whose mesh is about two millimeters; that portion which cannot be passed through is weighed as gravel and coarse sand; the portion passed through the sieve is placed in a glass vessel and rapidly agitated with water for several moments, and then allowed to come to a state of rest for a fixed period, the fine material then remaining in suspension in the water is filtered off, dried, and weighed as impalpable matter; that which has subsided to the bottom of the vessel is then estimated as fine earth.

Of the remaining soils analyzed and of the value of mechanical analysis of the soil generally, we shall have more to say next week.—[Prof. Kedzie.

Students' Column.

The joint meeting of the Websters and Alpha Betas last Friday afternoon was not a competitive one. It was simply for the purpose of getting the Societies together and having a good time. And it really was the most enjoyable exercise of the kind to which we have ever listened. It was not only interesting but instructive.

Prof. Platt with the College choir furnished music for the occasion; S. M. Ward delivered the salutatory; Miss Cora Neale read a selection entitled "The Lapse of Time;" Miss Ida Willey and A. N. Godfrey read essays; H. C. Rushmore and W. P. Burnham declaimed; J. King read a little box full of aphorisms, witticisms and funny anecdotes. W. C. Howard and J. E. D. Williamson of the affirmative, M. F. Leasure and G. H. Failyer of the negative, debated the question, "Ought the widows and orphans of Confederate soldiers killed during the Rebellion, to draw pensions from the United States?" The decision was given in favor of the negative.

In the debate, as well as in the other exercises, the members of both Societies acquitted themselves ably and nobly. The meeting was a credit to the Societies and to the College to which they belong.

In the midst of the exercises, Mr. and Mrs. Geo. A. Gale, who chanced to be present, were completely but pleasantly surprised. Mr. A. A. Stewart, in behalf of the older members of the Alpha Beta Society, presented them with Lowell's and Whittier's poems. Mr. and Mrs. Gale are both members of the Alpha Betas.

We shall anxiously await the next union meeting.

DOBBINS.

"Old Student" is convalescent. Jed's "hits," being chiefly noted for their equivocations, do not wound severely. This bandying of cavils which he has instituted is uninteresting and unimportant. Some of his statements are only half-truths. A wish to correct these is my only apology for again intruding upon your space.

After acknowledging his misstatement, Jed throws himself behind a quibble on the terms "mock court" and "moot-court" for defense. Webster says "moot" "is to discuss in a mock court," showing that the term is a correct one.

The INDUSTRIALIST of May 1st, 1875, gives a report of a moot-court held by the Alpha Betas before the Websters had held a moot-court, mock court, sham court, or any other kind of a court; their first one being reported in the INDUSTRIALIST of May 15th, 1875.

The Alpha Betas quibbled out of a challenge did they? That matter could be explained to their honor if space would permit; not so with your quibbling out of a challenge subsequently sent you by the Alpha Betas. This is your first intimation that a public contest is desired! Strange, in view of this more recent challenge; but two years are a long period in the life of a society. Will you at the present disregard Old Student's request for you to send a challenge?

If many of your members had not paid their dues, why were you so elated to secure the attendance of three-fourths of the few who had paid them? The Websters have nineteen members in regular attendance, the Alpha Betas twenty; but strength does not depend entirely upon numbers; ability is an important element. Of last year's graduating class of five, four were Alpha Betas, none were Websters; of the present class, one is a Webster, six are Alpha Betas.

I am willing to risk my reputation for fair dealing upon the above, I therefore sign my name. Will Jed take the same course in reply?

G. H. FAILYER.

[Concluded from first page.]

black or slate, because it carried rather higher style and finer points with it, a superior quality of flesh, softer hair and thinner skin.

SIZE OF THE IMPROVED BERKSHIRE.

I have heard of those, both in England and America, whose dead weight, dressed, occasionally exceeded 800 lbs.; but at the time I first visited the former country, the general weight, full grown, was about the same as at the present time—namely, from 300 to 600 lbs., according as the smaller or larger pigs were selected from the litter for fattening, and as they were subsequently fed and attended. The smaller sizes matured several months the quickest, and were preferred in the market for fresh pork and for curing also, by those who were particularly nice in the choice of their meat; being rather more tender and delicate than the larger animals.

QUALITY OF MEAT.

The meat of the improved Berkshire, like that of the unimproved, abounds in a much greater proportion of sweet, tender, juicy lean, well marbled with very fine streaks of fat, than other breeds of swine; but the former was far more delicate as now than the latter ever was. This renders the whole carcass the most suitable of all for smoking. The hams and shoulders are are almost entirely lean, a thin rim of fat covering only the outside.

MATURITY.

The improved Berkshire could be fattened at any age. Barrows matured in twelve to eighteen months, according as selected from the litters, whether the largest or smallest, and as subsequently fed and treated. It took boars and sows reserved for breeding about six months longer to get their fullest size and weight, not being pushed by high feed so rapidly as those destined for more immediate slaughter.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Record, Frankfort. $1.50 a year. Campbell Bros., Publishers. 14-1m

Telegraph, Waterville. $2 a year. W. P. Campbell, Publisher. 14-1m

Star, Hays City. A Republican paper published weekly by J. H. Downing. 16-1m

Independent, Oxford. Terms, $2 per annum. Republican in politics. John Blevins, Editor and Proprietor. 14-1m

Courier, Columbus. Leading paper in Cherokee county. Politically, Republican. S. O. McDowell, Editor and Proprietor. 14-1m

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-1m

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

Herald, Chetopa. The official paper of Labette county. Republican; $2 per annum. Published by J. H. Hibbetts & Co. 16-1m

Press, Girard. Established 1869. Official paper of county and city. Republican in politics. Wasser & Riddle, Editors and Proprietors. 22-1m.

News, Peru. F. G. Moore & Co., Publishers and Proprietors. $1.50 per year. A newsy sheet published in the interests of Chautauqua county. 22-1m

Herald, Florence. A wide-awake, local paper devoted to the interests of Florence and vicinity. Terms, $1.50. Howe & Morgan, Publishers. 14-1m

Empire, Concordia. Leading paper of Cloud county. A readable, reliable, Republican journal. $1.50 per year. H. E. Smith, Editor and Proprietor. 14-1m

Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-1m

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Times, Dodge City. All the Texas cattle news. Published at the "Long-Horn Metropolis." $2.00, in advance. Six months, $1.00. W. C. Shinn, Proprietor.

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Courier, Independence. Daily and weekly. The only daily in southern Kansas. Daily, $5; weekly, $1. Chock full of news. Try it. J. J. Chatham, Editor and Proprietor. 14-1m

Monitor, Jewell Centre, $1.50 a year. A 24-column weekly devoted to the interests of Jewell county. Official paper of the county. Byron J. Thompson, Editor and Proprietor. 14

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Times, Lyndon. A spicy, local newspaper devoted to the interests of Lyndon and Osage county. Independently independent in politics. Terms, $1.50. Miller Bros., Editors and Proprietors. 14-1m

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KANSAS STATE AGRICULTURAL COLLEGE.

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CALENDAR:—Fall Term began Thursday, Aug. 24th, and will close Thursday, Dec. 21st, 1876.

For further information, apply to
J. A. ANDERSON, President.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, NOVEMBER 2, 1876. No. 29.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Boiled Down.

Chanute ships flour to Iowa.

Eat apples and save doctors' bills.

Russell county range cattle very fat.

Canada had two feet of snow October 18.

Cowley county hopper eggs hatching out.

Twelve hundred children in Topeka schools.

Said that oil of cinnamon will remove warts.

Change Web. Wilder's address to St. Joe., Mo.

Kansas is prepared for an immense immigration.

By 1880 the population of Kansas will be 750,000.

Marshall county has a large crop of broom-corn.

Flouring mills are unusually active all over the State.

A Fort Scott mill grinds 600 bushels of wheat daily.

A Linn county farmer has just sold $12,000 worth of cattle.

A Sedgwick county acre yielded 400 bushels of pea-nuts.

Davis county farmers exultant over fall wheat prospects.

Chicago shipped 200 tons of hay to Germany the other day.

Hickory nuts .50 and pea-nuts $2.50 per bushel at Pleasanton.

Oswego rejoices in a second crop of beans, peas and lettuce.

Two acres of plastering in a new block in Hutchinson.

Increase in population of Lincoln county this year is 1,000.

Kansas walked off with a majority of the prizes from St. Joe.

Wellington reports greater progress than in any previous year.

A European war will raise the price of Kansas wheat and corn.

Atchison has 300,000 bushels of wheat in store, waiting for cars.

The grasshopper may be a burden, but he has ceased to be a scare.

Forty-one head of cattle sold in Kentucky the other day for $42,000.

According to Prentis, Topeka drouth is run off through a big drain.

The Colorado potato-bug did more damage in the East than in the West.

Africa is shipping paper to England, and the Times calls it the best in the world.

Kansas has 1,328 insurance agents, to say nothing of book agents and grasshoppers.

And now it is a picture-frame, made of hopper-grasses, which Emporia rejoices over.

For the first time in two years, the journeyman carpenters of Lawrence are all employed.

A cucumber weighing thirteen pounds furnishes cholera for the Atchison Champion office.

This time it is Topeka which boasts of a cotton-wood (future) tree growing on Shawnee mill.

During the first eight months of this year, America has exported $101,777,841 more than it has imported.

Gov. Bigler says: "But for the Kansas display of cereals, some of the foreign nations would lead the United States."

And soon the voice of the sausage-machine will be heard in the land, and maternal canines will refuse to be comforted.

Dr. Dickinson has secured Catlin's North American Indians for the State Library. Now let the Doctor yank in Sitting Bull's yahoos.

Kansas Building.

The Topeka Blade urges the adoption of a suggestion, made by a gentleman just returned from the Centennial, that the Kansas building be made a permanent fixture in Fairmount Park, and be used for the continual exhibition of Kansas products. As the Main building is to stand, it is likely that permission could be obtained from the Park authorities for ours to remain; and it is suggested that the railroads would pay the expenses of maintaining the exhibit.

We were in the Kansas building off and on for three months, and are firmly convinced that by no other method could this State have been so well advertised for ten times the sum expended. Every acre of land that is made productive tends to lessen the rate of taxation, and every one hundred dollars added to the aggregate wealth of the community by new-comers has the same effect. Hence, the money effectively expended in showing immigrants what Kansas is and can do, so far from being thrown away, yields a far higher interest on the investment than if put in bonds. And for this reason the Legislature would be more than justified in maintaining the exhibit for a few years, even if the railroads do not. Because, the probabilities are that a large number of visitors will be found at Fairmount Park after the closing of the Centennial; first, to see the grounds on which the greatest of the World's Fairs was held; second, to see the collections in the Main building, Memorial Hall and Art Gallery; and third, to see one of the handsomest parks in the world. The Centennial itself has made a huge difference in the status of Philadelphia, and no better place could be selected for a permanent exhibit of Kansas products. By all means let our building stay where it is, if the exhibit can be freshly mantained.

EVERY semi-occasionally somebody finds a bone, stone-hammer or tooth-pick imbedded in rock; whereupon somebody rests a lot of assertions to the effect that the human race is a few millions of cycles older than the sun. It is said that Mr. John Adriance, of Galveston, has a Mexican coin dated 1710 which was taken from the center of a piece of hard and almost transparent rock found in the Rio Grande. The trifling matter of date isn't worth noticing, and on this discovery we insist that the Mexican government is older than the entire planetary system.

WHILE the American government was blowing out Hell Gate, and sweeping out the mouth of the Mississippi, in order to give shorter and safer channels to vessels, the English government has constructed a monster gun. It weighs one hundred and sixty-two thousand pounds, uses a charge of three hundred and seventy pounds of powder, and throws a shot weighing seventeen hundred pounds a distance of seven miles.

There is something decidedly significant in the pointings of the two facts. Our nation is developing machinery for raising and moving the products of the soil, while every European nation is keenly alive to the dangers of war. And the particular moral to this contrast is, that as Kansas is the best agricultural State in America, every body should come to Kansas.

OWING to the action of the Legislature of last winter in confining the investment of the State Permanent School Fund to bonds of the State of Kansas and of the United States, that fund has largely accumulated in the State Treasury. In answer to a letter written by State Treasurer Francis, inquiring if seventy-five or one hundred thousand dollars of the State bonds could be purchased in New York, Donnell, Lawson & Co., State fiscal agents, write, under date of September 30th, that it is not possible to buy such an amount of our bonds at any price; that Kansas State bonds are held principally by the savings banks as a permanent investment for the security of their depositors, and are never sold unless on the occasion of some unlooked-for emergency. They say that small lots only of Kansas bonds can be bought at par, and Kansas seven per cents will demand a handsome premium.—[Commonwealth.

The New York Herald says it is remarkable that a general revival of trade should take place in the midst and heat of a presidential canvas, when, usually, even in good times, trade suffers and becomes slack. If this business revival were felt only in the eastern cities it might properly be called one of the effects of the Centennial Exhibition. But trade is awakening and confidence reviving West as well as East. St. Louis journals note a large increase of country buyers and a generally active trade. Chicago, Cincinnati and other western cities report greater activity in trade than has been known since 1873. From New Orleans we hear that the new cotton crop coming into market has a marked effect upon business. New England reports hopeful effort towards establishing an export trade. Wool which has been dull for a long time finds sale again. The Pittsburg papers speak cheerfully even of the iron trade, which has been the most depressed of all. There are it seems indications of an improved and improving business in iron.—[Lawrence Journal.

THE INDUSTRIALIST.

THURSDAY, NOVEMBER 2, 1876.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE Kansas Star is a creditable little paper printed by the pupils of the Olathe Asylum.

THE gentle fly buzzeth his buzz no more; he sticketh to the wall and suffereth the ague to rattle his blamed life out.

IN the last ten years, screw propellers have superseded paddle-wheels; marine engines weigh one-half less; steam pressure has quadrupled; and two-thirds less coal is consumed.

THE Boston Institute of Technology has just established a school for the instruction of pupils in the practical use of tools, and by so doing has followed the example set in the Kansas Agricultural College three years ago.

WHAT has become of those prairie chickens promised us by one of our subscribers a couple of months ago?—[North Topeka Times.

After a desperate struggle with this conundrum, we have come to the conclusion that, as the weather was warm, the aforesaid chickens "spiled" long ago, and that Root has been the victim of misplaced confidence. Speaking of which, what becomes of the chaps who promise to bring editors wood, and never do? Where do they go when they die, or do they ever die?

ONE of the handsomest things at the Centennial is a female head moulded in yellow butter, instead of plaster or marble, by a farmer's wife living near Helena, Arkansas. It is preserved in a glass-covered refrigerator. We learned from the artist that eight years ago she began such work in her dairy for the amusement of her children; that, as her contribution to a church fair, she moulded a head which attracted attention and brought a good price; that her husband was poor, and finding she could help him in this way she had followed it up. In reply to a question why she did not take clay instead of butter, she claimed that the latter was much more easily worked, looked better, with re-touching could be preserved a long time, and that plaster moulds could be furnished for the marble-cutter. That she is a genius none can doubt. And her originality in the choice of material, apart from the perfectness of the workmanship, deserves the highest credit. This lady had no instruction whatever. Her tools were cedar splints, pointed as she wished them, and a camel's hair-brush. Any lady desiring a pleasant amusement can follow the lead of the Arkansas farmer's wife.

Concerning a Popular Humbug.

Central Kansas is just now being visited by a new phase of an old humbug. Its general characteristics can hardly be better given than in the language of its agent, an affable gentleman of foreign extraction who called upon us last week, who describes it as a "powther, sir, as will entirely prevent the exploding of the oil in your kerosene lamp, sir!" In other words, this gentleman proposes for the small sum of fifty cents to furnish a small box of a powder, one grain of which when added to a pint of inflammable, low grade oil, will render it entirely non-explosive and harmless. A more antiquated or transparent fraud can hardly be named in the whole annals of quackery. Of the six so-called ingredients of the article in question, three were at once apparent to the senses, viz.: common salt, camphor and a blue coloring matter, possibly aniline blue or indigo; the other three we failed to determine, owing to the fact that a tender of a "nickel" for a sample for experimental purposes was refused by the agent with withering scorn. They were, doubtless, equally common-place and useless.

Now, to people of ordinary intelligence, it will be quite needless to add that without exception all of these patent mixtures and secret powders, hawked about the country under the enticing titles of "gas-killers," "non-exploders," etc., are about as efficacious in their influence on explosive oils as so much pine sawdust. It is sufficient to state that to chemists and experts generally no substance is known which when added in small quantities can render an inflammable and dangerous oil non-explosive. In those cases where the agent himself experiments before the household, and appears to prove that he has produced a "safe" oil, nothing is really proved whatever; the oil is just as explosive after the patent mixture has been added as before, and can be easily proven so by fair experiment. But the agent, operating with the cool oil, unaffected by hours of heating in a lighted lamp, gives a whisk of the lighted match across its surface, or even plunges it into the liquid itself without explosion, and announces the oil as "safe" and "harmless." With an equally skillful use of the "fire test," any one could easily prove benzine, gunpowder, or nitroglycerine "non-explosive," and with equal fairness. We must not fail to bear in mind that, in the most inflammable of low grade kerosenes, it is not the oil itself which is so dangerous but its vapor, which by prolonged heating in a lighted and half-filled lamp becomes when mixed with eight or nine volumes of air scarcely less explosive than gunpowder. It is the formation of this vapor which no powder or mixture of powders can either affect or prevent.

Nor is this particular patent fraud which we have been considering either new or peculiar in its nature? Ever since the discovery of petroleum and the appearance of cheap, low grade oils upon the market, have these "safety-powders" been invented and promulgated. The great majority of these mixtures have consisted simply of common salt and aniline red or blue, sold at a profit of from eight to ten dollars per pound. Occasionally, however, these safety compounds are of a highly complex and interesting nature. One high-priced recipe is as follows: "For forty gallons of oil, add carbonate of soda, three pounds; alum, two pounds; lime, two pounds; slippery elm, two pounds; gum camphor, one pound; oil sassafras, one ounce; essence of tar, one ounce." Another reads: "To forty gallons Naphtha, take potatoes, fifty pounds; lime, four pounds; salsoda, four pounds, curcuma, three pounds." And still another: "Add sulphur, five pounds; rusty iron, one hundred pounds; onions, one bushel; rosin, five pounds; to the same quantity of Naphtha." A safe, non-explosive and highly luminous oil is guaranteed as the result of each recipe! And so the whole ludicrous list of humbugs might be continued ad nauseum.

The moral of all "these presents" is simply this: Absolute safety can only be secured by burning in our lamps first-class high grade oils, which flash at a very high temperature only. Low grade oils are always dangerous, and can never be rendered either safe or harmless by any compound whatsoever. We do not indeed flatter ourselves that in all this we have said anything which will serve to stay the progress of the dispenser of the patent safety-powder. Such a consummation can only be hoped for when the mission of the "fool-killer" shall have been most vigorously and conscientiously performed, and people have learned to apply to these quasi-scientific matters that common sense which they so generally exercise in the ordinary affairs of every-day life.—[Prof. Kedzie.

The Centennial.

The editor of the Times returned from a flying trip to the Centennial last Friday, having been gone thirteen days and spending six days on the exhibition grounds. To say that the Centennial is a grand success, and the finest exhibition the world ever saw, only faintly expresses it. Its results will be worth untold millions to the country, because it will draw here, from every quarter of the globe, an immigration such as the world never saw or dreamed of.

One of the great attractions on the grounds is the Kansas exposition building, occupying a conspicuous place and drawing to it hundreds of thousands of visitors from every part of the country. It is of itself a miniature world's fair, and the results will prove that the $25,000 appropriated by our Legislature is only a drop in the bucket when compared with the future benefits to be derived. Had the Legislature appropriated $100,000, we believe it would have been returned to the State tenfold.—[Topeka Times.

THE INDUSTRIALIST.

THURSDAY, NOVEMBER 2, 1876.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:40 A. M.
Going West..... 3:52 P. M.

FREIGHT ARRIVES.

Going East..... 12:20 A. M., and 11:35 P. M.
Going West..... 5:15 A. M. and 5:45 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER, Agent.

Number of students enrolled this term, **172.**

Since last report, Emma F. Eckman and Wilmer K. Eckman, Osborne City, Osborne county, have been enrolled.

Don't fail to attend Prof. Riley's lectures in Manhattan, Thursday and Friday evenings of this and next week.

We rather imagine that the students who walked from Manhattan to College this morning, had no particular objections to following the sidewalk. It rained "somewhatly" yesterday and last night!

Mrs. Werden returns thanks to Misses Maggie Esdon and Ella Childs, advanced students in her department, for so kindly and ably attending to her classes during her recent illness.

The old students of the College will be pleased to learn of the prosperity of their old friend E. L. Thorpe, who now occupies the position of Professor of German and Elocution in Baker University, Baldwin City, Kansas.

Next week our readers will be favored with another article from the Regential staff, received too late for this number. Owing to his extreme modesty, the author requests that his name be not printed. What is this world coming to, any how?

The plasterers are putting on the finishing coat in the horticultural building, and when everything is slicked up around there and Prof. Gale's classes get comfortably situated, we presume that such poor unfortunates as newspaper reporters will be allowed a wide berth.

Gov. Salter is out making speeches, and the election will soon be over, so that we entertain the liveliest expectation of an article from Regent S. within a few days. It will probably be followed by one from Regent Folks, on the general condition and prospects of South-western Kansas, or some other subject.

Prof. C. V. Riley's lectures on Economic Entomology, before the class in Botany, were begun last Monday. Standing first in his specialty, Prof. Riley selects with rare tact the practical knowledge most needed by the farmer, and discusses the habits of the beneficial and injurious insects with reference to the value of that knowledge to Kansans. We are a good deal more than delighted with the practical worth of the course. It will be continued next week at 8:40 A. M., and 11:10 A. M., in the President's room; and visitors are invited to be present.

Entomological Lectures.

Prof. C. V. Riley is now giving an interesting course of twenty lectures on Economic Entomology before the Botany class of the Agricultural College. He has consented to give four evening lectures in town for the benefit of the general public; and as we have obtained the use of the Presbyterian church, we take pleasure in announcing that the following lectures will accordingly be given:

1. Thursday Evening, Nov. 2d.—Subject: "A Future Source of Wealth to Kansas."

2. Friday Evening, Nov. 3d.—Subject: "The Rocky Mountain Locust, or Grasshopper." General considerations: Past history, life history, nature, habits, ravages, etc.

3. Thursday Evening, Nov. 9th.—Subject: "Entomology." Considered as a study, and in its bearings on Agriculture.

4. Friday evening, Nov. 10th.—Subject: "The Rocky Mountain Locust, or Grasshopper." More specific considerations: Its native home, causes of migrations, how it has and will affect Kansas, and how to meet it.

The lectures will begin at 7:30. The last one will be devoted more particularly to a consideration of how best to meet the enemy next spring, and how it will affect Kansas in the future.

Laboratory Notes.

The series of mechanical analyses of soil begun last week by the class in Agricultural Chemistry is completed in the following:

CLAYEY SUBSOIL.

Analyzed by Irving Todd. Sample collected near the horticultural building:

Gravel and coarse sand	33.19	per cent.
Fine earth	29.37	" "
Impalpable matter	37.44	" "

MUCK SOIL.

Analyzed by M. F. Leasure. Specimen collected from ravine passing through the north-eastern portion of the College farm:

Coarse sand	11.26	per cent.
Fine earth	80.60	" "
Impalpable matter	8.14	" "

LOAM SOIL. NO. 2.

Analyzed by J. F. LaTourrette. Sample collected from the College nursery:

Sand	12.66	per cent.
Fine earth	77.67	" "
Impalpable matter	9.67	" "

The specimens here given are fair examples of what can be accomplished in the mechanical analysis of soil. While, strictly speaking, the process does not admit of exact and scientific accuracy, yet for practical purposes its results are probably quite as valuable as those of the far more expensive and complicated process of chemical analysis.

We know that other things being equal a very close relation exists between the fertility of a soil and the fineness of its particles, when this is not carried so far as to render them too compact and impervious, as in the case of heavy clay soils. Tracts of country which have for years been celebrated for their fertility, and some of which for a half century have produced enormous crops in succession, are almost invariably characterized by the fine, open, and porous character of their soils. The celebrated Scioto bottom, quoted by Johnson, is a very good illustration of this principle.

Now the reason of all this is not very far to seek. The plant's soil-food, as we well know, enters its circulation only in a soluble form through its tiny rootlets. In a finely divided soil it is plain that not only will more of this soil-food be presented to the plant in an available form from the increased surface exposed to the solvent agencies of the soil, but that the little root hairs will spread more freely, come in contact with an increased surface, and thus absorb more abundantly the nourishing matter offered. Of course, as already stated, excessive division, as in the case of a heavy and impervious clay soil, would defeat these very advantages which would be otherwise gained.

Hence, by this mechanical analysis of any given soil, by which we determine the relative proportions of coarse matter, of fine earth, and of impalpable matter, we at the same time obtain a very tolerable idea of the proportions of inert and of productive matter which our soil affords. While for scientific purposes the process is incomplete and unsatisfactory, yet for practical ends it is often very valuable and suggestive.—[Prof. Kedzie.

Wilmer and Miss Emma Eckman started for Manhattan last Tuesday, to attend the Agricultural College. Osborne county is pretty well represented in the College at present, and our people will take pride in noting their rapid advancement and final success.—[Osborne County Farmer.

The monthly examinations in all classes but those of the Printing Department were held on Friday. The students report the examination unusually rigid, and we think they are about right, for they came from the several recitation rooms looking as if they had seen a month of sickness.—[News.

Students' Column.

Wendell Williston, after finishing his geological tour in the West and delivering several lectures in Hays City, has gone to Yale College to spend the winter.

The following are the officers elected by the Webster Society for the remainder of this term: President, F. O. Hoyt; Vice-President, J. F. LaTourrette; Recording Secretary, J. King; Corresponding Secretary, M. F. Leasure; Treasurer, J. E. D. Williamson; Critic, H. C. Rushmore; Librarian, J. King; Marshal, R. McKelvy.

Next Saturday evening is their last meeting before election, and the Websters will dispense with debate and have a political speaking. Each member will advocate the principles in which he believes. A committee was appointed to extend an invitation to the Alpha Betas to join with them in this part of the exercises. JED.

The Alpha Beta Society elected the following officers Friday afternoon: President, Miss Miriam Failyer; Vice-President, A. A. Stewart; Secretary, John S. Griffing; Treasurer, W. Ulrich; Marshal, G. H. Failyer.

An exceedingly interesting session was held. Nearly all the members were present, and took part in the exercises with commendable zeal. D. A. Beamer deserves especial credit for the good taste and elocutionary powers displayed in the performance of his duty, that of select reading.

At a subsequent meeting the following communication was ordered to be sent to the Webster Society:

TO THE WEBSTER SOCIETY:

You are hereby challenged to a debate with the Alpha Beta Society, under the following conditions:

1. Time of holding debate to be not less than two nor more than four weeks from the date of our notification of your acceptance. The exact time and place to be designated by the Webster Society.

2. Number of speakers on a side to consist of at least three and not more than five persons. The exact number to be decided by the Webster Society.

3. The time which each speaker shall consume to be fixed by the Webster Society.

4. We submit the following question, the Webster Society to have choice of sides: "Does climate mainly determine the character of man?" Should this question not be satisfactory, we agree to accept any question which the Websters may offer, if they give us choice of sides.

5. All points not covered by the foregoing to be settled by the Presidents of the two Societies.

A. A. STEWART, Secretary.

"Jed" stated that the Websters had the largest Society. "Old Student," in his first correction (?), stated that the Alpha Betas had about twenty-four members; after counting, he finds that the Websters have nineteen members and the Alpha Betas twenty. So he didn't beat me much on the guess, after all.

He charges me with instituting a "bandying of cavils." The truth is, I was attending to my own business, reporting for the Websters, and said nothing aspersively of any individual or Society. He himself began the bandying by stating that "the Websters now announce that they will receive ladies;" by intimating that the Websters once ran a branch Society; and, further, by making insinuations which tend to cast disrepute on the Websters.

His second article is no less opprobrious, and is well calculated to arouse a feeling of indignation among the Websters. He says the Websters dishonorably quibbled out of a challenge. No Webster is ashamed for having refused to accede to the very unjust conditions of their challenge.

He seems anxious to broach the subject of ability, and defies me to send a challenge. He takes upon himself considerable authority. The Websters do not invest me or any other member with the power to send challenges; they attend to their own business.

Certainly, I shall most cheerfully "risk my reputation" and sign my name,

J. E. D. WILLIAMSON.

THE INDUSTRIALIST.

THURSDAY, NOVEMBER 2, 1876.

Prof. Protoplasm Huxley.

The eminent English scientist, Prof. Huxley, made but a short stay in New York, but his arrival was the cause of a conversation between one of our amateur scientists and a matter-of-fact friend that seems to be worth reporting. The amateur is an enthusiastic admirer of Huxley, and he spoke so extravagantly about him that the friend finally became curious and asked:

"Who in thunder is Huxley, any way?"

"You don't mean to say you have not heard of Prof. Huxley, the great scientist?"

"Why, man, Huxley made the important discovery about protoplasm?"

"About what?"

"Protoplasm."

"And what the dickens is protoplasm?"

"Now, look here, you don't mean to sit there and tell me you don't know what protoplasm is?"

"That's just it. Nary protoplasm?"

"Well, protoplasm is what we may call the life principle."

"Anything to do with insurance?"

"Oh, nonsense; the life principle in nature — the starting point of vital action, so to speak."

"He discovered that, did he?"

"Yes, a few years ago, in England."

"And what good is that going to do?"

"Good! A great deal of good. It expands the circle of human knowledge, and is valuable in bearing out the theory of evolution. It is a noble contribution to science, and it has made Huxley one of the few immortal names that were not born to die."

"So Huxley knows all about the life principle, does he?"

"Yes, all about it."

"And the starting point of vital action?"

"Exactly."

"Well, see here, now, can he take some of that protoplasm and go to work and make a man or a horse or an elephant with it?"

"Oh, no; he couldn't do that."

"Can he take it and make anything at all of it, even a gnat or a fly?"

"I guess not."

"Well, then, he may just go to thunder with his protoplasm. I don't believe it's worth ten cents a pound, anyhow. 'Pears to me these scientific fellows put on a big lot of airs about a very little. Protoplasm, eh? Shouldn't wonder if Huxley came over here to get up a company to work it. Did you say the mine is in England?"

The scientist gave up in despair.—[Correspondence Detroit Free Press.

"MORE inquiry is reported for homes at the West during the last few weeks than has been known in this section for many years. Kansas seems to be the objective point with very many, owing perhaps to her splendid agricultural exhibit at the Centennial, and the extended mention it has received at the hands of the press."—[Springfield, Mass., Republican.

Our farmers now say that if this open weather continues much longer the grasshoppers were a good thing. That the early sowed wheat would have got too much of a growth; that late sowing this year will be the best.—[Abilene Chronicle.

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CALENDAR:—Fall Term began Thursday, Aug. 24th, and will close Thursday, Dec. 21st, 1876.

For further information, apply to

J. A. ANDERSON, President.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, NOVEMBER 9, 1876. No. 30.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
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Boiled Down.

La Cygne is building a large elevator.

Kansas fruit took the Centennial premium.

Wichita pays $1 per bushel for good wheat.

Denmark uses American mowing machines.

Junction wheat is extra fine quality this year.

Wyandotte county dog tax yields $1,800 this year.

A Humboldt farmer captured 215 rats in one day. How?

Davis county hills are green with luxuriant wheat.

Eat apples and prevent the necessity of buying quinine.

How to please a lady — let her do as she pleases. That's so!

China is going to establish a mint — a sort of peppermint.

They now have scales capable of weighing one hundred tons.

Every week London eats one hundred tons of American beef.

Thursday, the 30th inst., will be Thanksgiving and turkey day.

During October Osage City shipped 7,864 tons of coal, worth $23,600.

Sedgwick county claims to have the finest stand of wheat ever in Kansas.

The careless handling of coal oil lamps causes six thousand deaths per year.

Every paper in Kansas reports the settlement of large numbers of immigrants.

The Centennial Commissioners say that the Kansas exhibition is immense.

America, instead of Africa, furnishes England the best paper used by John Bull.

Reno county pays school teachers twenty-five per cent better wages than last year.

The Republican reports a larger immigration to Ottawa than that of any year since 1870.

This blessed election will soon be over, when the papers will give us items for "Boiled Down."

Gov. Hayes was so delighted with the Kansas exhibition that he visited the building twice the same day.

This time White Cloud has the big squash, and its squasher girths five feet five inches and weighs 113 pounds.

Jewell county farmers stand straight up to the claim that theirs is the best county in the world for raising hogs.

Kansas City elevators, though double their former capacity, have already done twice the business of last year.

"My son has earned a reputation for scholarship," said an old man, "but the worst of it is he can not earn a living."

A pillar of cloud by day and a pillar of fire by night points the way to ruin in various parts of the States at present time.

Several elevators have burst along the Central Branch by overloading. A number of hogs were smothered by a break in one at Whiting.

Though the Kansas potato crop is less than usual, shrewd merchants aver that the price will not be as high as was expected a few weeks ago.

Iowa has no wheat for export and Minnesota has only a surplus of 11,000,000 bushels, while Kansas can't get half enough cars to move the crop already in market.

A Neosho county farmer drilled his corn three and a half feet one way and eight inches the other, with one stalk in a hill. The result is he will make about three thousand bushels of corn on seventy acres.

How Long do Vegetable Seeds Retain their Vitality.

BY REGENT ———.

I was one day looking over a catalogue sent me by a large seed-house, and my eye ran down a column which showed, or professed to show, the number of years vegetable seeds could be kept in the ordinary way and retain their germs in good sprouting condition; and the time seemed long. Then I remembered that in cultivating foul land for a few years, a new set of weeds, a new kind of grass, and in a few instances a new kind of flowers appeared,—new because never or not recently seen on that land. Commence the war on weeds against sun-flowers, burs and foxtail, but it will end with purslane. Men that have made clearings in the timber and then burned it off know how the "fire weed" sprang up, though it did not grow there before.

I have known persons who were believers in "spontaneous generation," but did not know it. They expressed themselves by saying "the weeds come of themselves." And most persons living in western Kansas know how the buffalo grass gives way to the blue joint. There are thousands of acres on which nothing but buffalo grass has grown perhaps for centuries, where under the steady march of civilization it is gradually giving place to the blue joint. Twenty-five years ago the grass on the uplands about Manhattan was buffalo grass; now it is nearly all blue joint. Have winds, floods, beasts and birds carried seeds to these places recently; or have they been lying here many years in a dormant state?

Answer which way we will, there are many well-authenticated instances of seed that have retained their vitality in a latent state for a long time. As an instance, some time ago the North British Agriculturist related an account of the clearing away of the debris from an old Roman camp, upon the soil of which camp, after it was made bare, there sprang up no less than seventy-four varieties of oats, never seen in that section before. The matter was thoroughly sifted and the conclusion reached that the place was an old cavalry camp, and that the oats now germinating were brought from other countries and had lain buried for 1,500 years. It is said that Dr. Lindley raised three raspberry plants from seed discovered in the stomach of a man whose skeleton was found thirty feet below the surface of the earth, at the bottom of a burial-mound which was opened near Dorchester, England. With the body had been buried some coins of the Emperor Hadrian, from which it is assumed that the seeds had lain there sixteen or seventeen hundred years. Prof. Agassiz asserted that "there are some well-authenticated cases in which wheat taken from the ancient catacombs of Egypt has been made to sprout and grow."

It would seem from the facts given above, astonishing as they are, that there is no limit to the duration of the latent vitality of some seeds. When there are well-known instances of seeds living hundreds of years, may they not hold their germ thousands or tens of thousands of years, when no change of conditions occurs to expose them to decay or call them into activity? Indeed, some men, and pre-eminently amongst them Alexander Winchell, LL. D., have asserted that seeds have been preserved in good contion, so that when exposed to the proper influences they have germinated, ever since the reign of ice; vegetation and trees that grew before this period were swept down and covered up by the glacial drift, some to decay, some to remain alive for centuries, others to await a germinal resurrection within the period of written history, and a few — if the facts are correctly reported — have sprouted within a recent time. As time and circumstances have brought them nearer the sun, they gladly avail themselves of the privilege of waking from their long sleep. The bones, the hair and the flesh even of the extinct mammoth have been preserved in the glacial deposits on the shores of Siberia; and in so complete a state of preservation has the flesh been found that the bears and dogs have greedily eaten it. If material as perishable as muscular fibre has been preserved since a time preceding written history, why may not vegetable seeds with their oily tissues be preserved as long? Do they not possess the power to resist the tendency to decay under similar circumstances?

In his "Origin of Species," Darwin says, "In the midst of a very sterile heath in Staffordshire, some hundreds of acres were planted with Scotch firs, and after twenty-five years not less than twelve species of plants, not including grasses and sedges, had made their appearance in the plantation of firs which could not be found in the heath, though the plantation seems to have been visited only by insectivorous birds."

[Concluded on fourth page.]

THE INDUSTRIALIST.

THURSDAY, NOVEMBER 9, 1876.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE last Kansas Churchman had a strong article on the evolution theory. Its conductors have certainly "evolved" the neatest typographical journal in the State.

DR. REYNOLDS richly deserved the handsome compliment of a beautiful cane, presented by the citizens of Davis county, for his efficient management of their recent Fair.

THE difference between the imports and exports of Kansas is seen in the fact that, while merchants speedily receive goods from the East, it is impossible for our shippers to obtain cars for forwarding grain. All the river towns and St. Louis and Chicago are glutted with delayed wheat.

A New Enemy of the Grasshopper.

From the Lawrence Journal.

LAWRENCE, Kas., Nov. 1, 1876.

EDITOR JOURNAL:—Various reports have been circulated in regard to the destruction of the eggs of the Rocky Mountain Locust (Caloptenus spretus) by a worm. I am happy to state that these reports were substantiated yesterday by Mr. McLockhead of Deer Creek, Kanawaka, twelve miles west of this city, who brought me a box of earth in which the eggs of the "hopper" had been abundantly deposited. To-day a similar box was secured from W. B. Barnett, Esq., of Hiawatha, Brown county. In both of these instances a large proportion of the eggs have been destroyed by a small, white larva. Many of the egg-cases, which ordinarily each contain from twenty to thirty eggs, had no eggs in them, but were full of these worms or larvæ, each one of which took the place of an egg which it had destroyed. Some of the egg-cases contained only two or three larvæ with more than twenty sound eggs. I consider these to be the larvæ of a parasitic Hymenopterous insect which I hope to obtain in the winged or perfect state, if I succeed in carrying them safely through their transformation.

So far as I know, this is the first discovery of a parasite upon the egg of our locust, though such parasites have been known to attack other species of the same family. This new friend seems likely to prove a most valuable one, and will render efficient aid to man in resisting his most formidable insect foe. The population of those counties where locust eggs have been deposited should not, however, relax their vigilance, but should take systematic measures to carry to completion the work so well begun by the parasites. Mr. Barnett informs me that the citizens of Brown county have effected an organization, extending into every township and district, for the purpose of exterminating the eggs and the young hoppers when they hatch next spring. Let other counties do the same. Yours,

F. H. SNOW.

We asked Prof. Riley for his opinion of this new parasite, and he kindly furnished the following:

I am inclined to think that the parasite referred to by Prof. Snow is Dipterous and not Hymenopterous, for the reason that his description accords with the character of a small maggot that has, for the past two months, been doing excellent work in destroying the locust eggs all over the country. I have found it everywhere in Nebraska where I have examined locust eggs, and it has been sent to me from Minnesota, Texas, Arkansas and Missouri. It is a maggot about one-eighth of an inch long, occurring in the locust egg-pods, either singly or in numbers. It either sucks the eggs dry, or by puncturing them frequently causes them to rot. It contracts into a coarctate, brown pupa and produces a species of Anthomyia scarcely distinguishable from the raphani, which is known to infest radishes. I propose to call it Anthomyia calopteni. This fly has something the appearance of a miniature house-fly. These Dipterous maggots, though bearing a general resemblance to those of some Hymenoptera, are easily distinguished by the more tapering and retractile anterior body, and by having a pair of dark hook-like jaws that retreat beneath the skin when not in use; whereas the head of Hymynopterous larvæ, though often small and more or less retractile, is free, with horizontal or transverse jaws.

In addition to this new parasite of our locust eggs, there is a larger grub which is Hymenopterous and which is also quite common the present year. It is at once distinguished from the smaller maggots by being one-third or more of an inch long, and by lying curved with its head and tail brought together. It devours the contents of the locust egg-pod except the shells, and will doubtless produce some ichneumon. What with the work of these parasites, the premature hatching of many of the locusts, and the addling of others from excessive moisture, the signs are encouraging; but the number of eggs is so large that if half of them should be destroyed by next spring, there will still be hoppers enough to devour everything, and it behooves the people, as Prof. Snow suggests, to organize and assist these natural agencies in the war of extermination.

THE opinion was ventured last week that the closing days of November would show as fine a stand of wheat as was ever boasted in years past in south-western Kansas. We felt it in our bones then, and are almost certain of it now. Great fields of hundreds of acres, that a week since looked only like newly plowed ground, to-day cheer the landscape with a velvety green. The growth has been almost miraculous. This fall's experiments will open up afresh the question as to the best time to seed. It really looks as though in our soil wheat does equally well sown in August or October. South-western Kansas will astonish the State again next year with her enormous wheat crop.—[Wichita Eagle.

AT the Fifth Annual Session of the National Agricultural Congress, held in Philadelphia, September, 1876, the following preamble and resolutions were unanimouslv adopted:

WHEREAS, The people of some of the Western and North-western States have again been afflicted by the Rocky Mountain Locust scourge; and,

WHEREAS, The devastations of this insect form a most serious obstacle to the settlement and welfare of much of the country between the Mississippi and the mountains, and these devastations have become a national calamity; and,

WHEREAS, There is much to learn of the native breeding places of the pest, and some hope that by a more thorough knowledge of of those breeding places and of the causes the migration therefrom, we may be able to prevent the invasion of the more fertile country to which the species is not indigenous; therefore,

Resolved, That it is the emphatic opinion of this Congress that some action should be taken by the National Government that will have for its object the palliation or avertion of this crying evil.

Resolved, That we consider that Congress owes it to the people of the West to take this matter into consideration; and we call upon the next National Legislature to follow the example of other nations under like circumstances and appoint a special commission for the thorough investigation of the subject.

Resolved, That the passage of some such bill as that introduced by Senator Ingalls, of Kansas, (S. 438) while contemplating the investigation of a few other insects of national importance, such as the cotton worm of the South, would have been of vast moment to the people of the South and South-West, and would have brought the needed investigation into the locust question.

Theory vs. Practice.

Yes, he remarked, I think my early failures in farming were good lessons to me; it took away the feeling I had that the mistakes of others were due to their lack of sense. You see, I came to Kansas from Chicago, where I held a responsible post in a first-class business house, firmly of the opinion that no obstacles could prevent me from having a large success in farming. I figured out my expected profits and went to work, determined to show my neighbors a thing or two in profitable farming that they had never learned. Well, the end of the season came, and there had so many unexpected difficulties arisen, so many causes to lessen the yield, the market price and the profit, that I found myself somewhat behind instead of several hundred dollars ahead. I found that figuring out profits and working them out were two different things. The failures of that season, I am convinced, did me much more good than success would. They caused me to go to work in a more rational and reasonable way; and, in the years that have passed, I have learned to take hold of my farm problems without expecting extraordinary profit.

We have no deductions to make from our friend's experience, except to say that the good solid work of the farm can take the bottom out of high and windy theories quicker than anything we know of. Learning to farm, like learning any other kind of business, costs money.—[Kansas Farmer.

THE INDUSTRIALIST.

THURSDAY, NOVEMBER 9, 1876.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:40 A. M.
Going West..... 3:52 P. M.

FREIGHT ARRIVES.

Going East..... 12:20 A. M., and 11:35 P. M.
Going West..... 5:15 A. M. and 5:45 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER, Agent.

Do you take the INDUSTRIALIST?

Number of students enrolled this term, **176.**

We are a little late this week, but election only comes once in four years.

Prof. Gale rejoices in the hope that the horticultural building will be ready for occupancy next Monday.

Remember Prof. Riley's lectures at the Presbyterian church, in Manhattan, on Thursday and Friday evenings of this week.

Prof. Riley's lectures on Economic Entomology have been of great value and interest. We shall speak of them more particularly next week.

We are requested to announce that Rev. Dr. Reynolds, of Fort Riley, will hold services at the Episcopal church, in Manhattan, next Sunday at 11 A. M.

Lieut-Governor Salter dropped in on us rather unexpectedly this morning; but then we are glad to see men of his stripe at any time, with or without warning.

The architect of our new buildings, E. T. Carr, of Leavenworth, is here making a thorough inspection of things, examining the work of the various contractors, and preparing his final report to the College authorities.

It is hereby known that any person or persons desiring to purchase pure-bred Berkshire boar pigs at $10 each, can be accommodated by calling on or addressing A. A. Stewart or Ed. Hunting, Manhattan, Kansas. 30-tf

Since last report Theodore B. Reynolds, of Fort Riley, Davis county; Louis A. Salter, Thayer, Neosho county; Miss D. A. Buell, Binghampton, New York; and Miss Etta V. Hulse, of Middletown, New York; have been enrolled.

The subject of Prof. Riley's lecture this evening is "Entomology," considered as a study and in its bearings on Agriculture. To-morrow evening he will discuss "The Rocky Mountain Locust, or Grasshopper," its native home, causes of migrations, how it has and will affect Kansas, and how to meet it.

Capt. Todd offers for sale, at his place near the Agricultural College, a few White Mulberry Trees, silk-worm food; cuttings by the dozen or thousand. Concord Grape-vines and cuttings; also, yearling Box-Elder, Ash and Elm Trees, all of which will be sold cheap. The best time for setting them is in the fall.

We visited Prof. Platt's elementary singing class the other day, and were well pleased with the progress which it is making. Much solid enjoyment may be taken by one who can sing, and our students are very fortunate in being permitted to pursue this study under the direction of such an efficient teacher as Prof. Platt.

And now Prof. Platt is happy, for he has gotten out of that little room on the first floor and gone with his flock of ninety-nine students to the south-east room in the second story of the College building. We don't blame the Professor for feeling jubilant over the fact that he has the best room in the building; and we trust that his classes will show their appreciation of their new quarters by taking hold of their studies with renewed energy.

Laboratory Notes.

The Chemical Department is under many obligations to Messrs. J. B. Lawes and J. H. Gilbert, of Rothamstead, England, for a complete set of their publications, issued in the last few months. From Mr. Lawes, "Memoranda of the Plan and Results of Field Experiments at Rothamstead;" and from Dr. Gilbert, a pamphlet on "Rainfall, Evaporation and Percolation," another on "Sewage Utilization," and still another on "Some Points in Connection with Vegetation;" all of which we have perused with much interest. A letter from Mr. Lawes also contains a point of such great interest to students of Agricultural Chemistry that we can not resist the temptation of giving an abstract:

ROTHAMSTEAD, England, Oct. 7th, 1876.

DEAR SIR:—I have forwarded you a copy of the paper referred to. We have made some important alterations in it by dividing the results into two periods, showing under what circumstances, where no change of manuring has taken place, any alteration of produce has occurred. I think we have obtained tolerably conclusive evidence that our soils which have been supplied with a large annual dressing of alkalies and phosphates are becoming exhausted of nitrogen. This is equivalent to saying that the atmosphere, rain, and all the various processes by which a plant is said to derive its nitrogen, are not equivalent to growing a cereal crop which removes from the soil an amount equal to about twenty pounds.

Yours, truly,
J. B. LAWES.

During the summer of 1875 we had the pleasure of spending an exceedingly pleasant day at Rothamstead and viewing, in company with Mr. Lawes and Dr. Gilbert, the progress of the experiments which are fully described in these publications they have so courteously forwarded.—[Prof. Kedzie.

The INDUSTRIALIST is published weekly by the Printing Department of the Kansas State Agricultural College, at Manhattan. It is neatly printed and tastefully arranged, and contains a variety of interesting matter. The editorial articles are timely and able. It appears to be almost wholly original, and gives special attention to Agriculture, Horticulture, and cognate subjects. In our opinion it is such a paper as every one can find a place for, and should take and read. Terms of subscription, only 75 cents per year in advance.—[Kansas Churchman.

The Websters last Saturday evening elected A. D. Wood a member. After the inauguration of officers, came political speaking. Besides the Websters, several of the Alpha Betas and a few of the visitors present took part. It is said to have been one of the most spirited debates ever held on College Hill.

The challenge sent by the Alpha Betas was unanimously accepted. The speakers were elected and invested with the power to make all arrangements.

Question for next meeting: "Is scientific reading more profitable than historic?" JED.

[Concluded from first page.]

Did not those seeds from which the unknown trees sprang lie there since a geological period preceding the present one?

Some men were digging a well in a small town on the Penobscot river, in Maine, about forty miles from the sea. They came upon a stratum of sand when twenty feet from the surface; as there was none like it nearer than the sea, it excited their curiosity; and as it was drawn up it was put in a heap by itself, while the stone and gravel taken out were hauled away. Soon after, the sand was scattered about the place where it had been piled, and for some time lay there unnoticed. In a year or two, however, small trees sprang up from the ground over which the sand had been scattered. The trees became objects of interest, and care was taken to preserve them from injury. Time proved them to be beach-plum trees, and they actually bore the beach-plum, which had never been seen before except on the sea-shore. The trees had sprung from the seed which were in the stratum of sand brought up to the surface of the earth by the well-diggers. The seeds had lain in their sandy grave since the remote time when that part of the State was the shore of the slowly receding ocean.

The question at the head of this article, then, must remain unanswered.

The North-East Passage.

A navigable Polar route between Europe and the heart of Asia is the latest and greatest achievement of geological exploration. This work, far surpassing in interest and practical value anything that Stanley has accomplished, the world owes to an intrepid Swedish explorer, Prof. Vordenskiold. Prof. Vordenskiold had a theory that the Gulf stream, after striking the coast of Europe passed around to the north of Scandinavia, and opened a way with its warm currents through the Polar Sea, north of Russia and Asia. The Professor sailed from Sweden in August, and has already, if his report does not exaggerate his success, proved his theory true and made a geographical discovery that will change the course of trade between Europe and Asia, and powerfully affect the destinies of millions of human beings for all time to come. He found a clear passage through the Polar Sea, reached the mouth of the Yenisei, and through it penetrated into the heart of Asia, almost to the very frontiers of China The country bordering the Yenisei is vast, fertile, and uncultivated. The waters about its mouth are warm. By this route vessels of light draught can be taken within 150 miles of the headwaters of the great Amoor River, and the commercial distance between Europe and China is shortened thousands of miles. This discovery has the greatest interest to Arctic explorers. It looks now as if the search for the north-west passage was a mistake. A north-east passage we know now there is, but as that is opened by the Gulf Stream, which does not flow to the north of the American Continent, there can be no scientific ground for believing that there is a north-west passage. The commercial results of the new route are obvious. Excepting Indian trade, which must go through the Mediterranean and the Suez Canal, commercial intercourse between Europe and Asia will soon begin to use the new north-east passage. The shortness of the route will add correspondingly to the comforts of mankind. New communities, new cities, perhaps, will be founded on the fertile banks of the Yenisei, and England will have more cause than ever to rejoice that the almost impassable Himalayas bar her Oriental provinces from the growing Asiatic dominion of Russia.—[Commonwealth.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

Press, Girard. Established 1869. Official paper of county and city. Republican in politics. Wasser & Riddle, Editors and Proprietors. 22-3m.

News, Peru. F. G. Moore & Co., Publishers and Proprietors. $1.50 per year. A newsy sheet published in the interests of Chautauqua county. 22-3m

Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-3m

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

Township Books, Poor Records, Estray Records, Poll Books, Official Records, furnished by the Kansas Publishing House, Topeka.

Chemistry and Physics.—The most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis, Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry, Photography and Household Chemistry.

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, NOVEMBER 16, 1876. No. 31.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Boiled Down.

Russell wants a woolen mill.

Scranton has five coal shafts.

Junction City will eat "hoppers."

Fort Scott cement is in great demand.

The herd law is exciting Osage county.

Topeka complains of flying ants; let 'em fly!

Covered wagon immigration has set into Oswego.

A man who chews tobacco should never choose a wife.

Independence has a grain trade of twenty cars per day.

Centennial receipts up to October 14th were $2,686,603.

Ontario carried away educational diploma from Centennial.

Sedgwick county is out of debt and has $4,000 in the treasury.

The demand for dwelling houses in Fort Scott is unprecedented.

Wild Alaska wheat is becoming a favorite with Oregon farmers.

The annual exports of this country to Russia are about $12,000,000.

There is a Chinese plant which changes color three times a day.

Reno county has one-fourth more children in its schools than last year.

The wool crop of this country last year was two hundred million tons.

Wichita received 400 wagon loads wheat from Wellington in one day.

The immigration to Kansas this winter and next spring will be immense.

Two Massachusetts men dress a steer in four minutes and ten seconds.

They have to try two or three times before they can hang a man in Ohio.

The per capita circulation of money is greater in Kansas than in Indiana.

The Austrian government declines to take part in the next Paris exposition.

The flax crop at Olathe averages from eight to twelve bushels per acre this year.

Kansas is shipping large quantities of sweet-potatoes not quite as long as a car.

A man in Massachusetts sold three hundred bushels of apples for three dollars.

Potatoes are so cheap in some parts of the State that they are giving them to editors.

Storms move at the rate of twenty-six miles on land and nineteen miles over the ocean.

Thank goodness the election is over, and our exchanges will soon be filled with local items.

Montgomery county, which now has 15,000 population, was the home of the noble and dainty savage eight years ago.

The Russians near Hays have broken fifteen hundred acres this summer, and have seeded four hundred acres of wheat and rye.

Kansas has more newspapers than either of the States of Alabama, Arkansas, Georgia, Louisiana, Maryland, North Carolina, South Carolina, Tennessee or Virginia.

Are not the majority of destructive prairie fires started by farmers who, after burning their own guards, let the demon fly, utterly indifferent to damage done to their neighbors.

Major Tom Anderson, after looking at the Kansas display at Philadelphia, is confirmed in the belief that

'Tis neither rank, nor wealth, nor state,
But git up and git that makes us great.

Silk Culture in Kansas.

In his lecture last Thursday night, at the Presbyterian church, on "A Future Source of Wealth to Kansas," Prof. Riley, after giving a most entertaining and instructive account of the history of silk culture in this country, of the natural history and habits of the worm, best methods of feeding, how the silk is utilized and manufactured, etc., closed in the following words:

In a lecture on the silk-worm, delivered just ten years ago by the late perpetual Secretary of the French Academy, de Quatrefages, the author introduces the subject with the following prologue:

"What would you say if a traveler, coming from some distant country, or a philosopher, who had found in some old book forgotten facts, should tell you, 'There exists, in a country three or four thousand leagues from here, in the south of Asia, a tree and a caterpillar. The tree produces nothing but leaves, which nourishes the caterpillar.' To a certainty, most of you would say at first, 'What of it?'

If the traveler or the man of learning should go on to say, 'But this caterpillar is good for something; it produces a kind of cocoon, which the inhabitants know how to unwind, and which they weave into beautiful and durable fabrics. Would you not like to enter upon the manufacture?' You would infallibly reply, 'Have we not wool from which to weave our winter vestments, and hemp, flax and cotton for our summer clothing? Why should we cultivate this caterpillar and its cocoons?'

But suppose that the traveler or philosopher, insisting, should add, 'We should have to acclimate this tree and this caterpillar. The tree, it is true, bears no very desirable fruit, and we must plant thousands and thousands, for its leaves are to nourish the caterpillar, and it is necessary to raise these caterpillars by the million. To this end we must build houses expressly for them, enlist and pay men to take care of them — to feed them, watch them, and gather by hand the leaves on which they live. The rooms where these insects are kept must be warmed and ventilated with the greatest care. Well-paid laborers will prepare and serve their repast, at regular hours. When the moment arrives for the animal to spin its cocoon, it must have a sort of bower of heather, or branches of some other kind properly prepared. And then, at the last day of its life, we must, with the minutest care and the greatest pains, assure its reproduction.' Would you not shrug your shoulders and say, 'Who, then, is such a madman as to spend so much care and money to raise—what? — some caterpillars!'

Finally, if your interlocutor should add — 'We will gather the cocoons spun by these caterpillars, and then factories to unwind them will arise, which will call out all the resources of mechanics. Still another new industry would employ this thread in fabricating stuffs. The value of this thread, these tissues, would be counted by hundreds of millions for France alone; millions that would benefit agriculture, industry, commerce, the producer and the artisan, the laborer in the fields, and the laborer in towns. Our caterpillar and its products will find a place in the elaborate treatise of statesmen; and a time will come when France will think herself happy that the sovereign of a distant empire, some four thousand leagues away, had been pleased to permit her to buy in his States, and pay very dear for the eggs of this caterpillar'— you would abruptly turn your back and say, 'This man is a fool.' And you would not be alone; agriculturists, manufacturers, bankers, and officials, could not find sarcasms enough for this poor dreamer.

And yet it is the dreamer who is in the right. He has not traced a picture of fancy. The caterpillar exists, and I do not exaggerate the importance of this humble insect, which plays a part so superior to what seemed to have fallen to it."

So spoke Quatrefages, in France; and, if dropping the retrospective for the prospective, I should, in my prevision of the position America is to occupy in silk culture, paint a prophetic picture of that industry in this country a century hence, you would no doubt vote me a dreamer, too; for I fully believe that in 1976 — and perhaps long before — the southern Atlantic States and south-western States will abound in silk-reeling establishments and silk manufactories, supplied with cocoons reared on all hands around and about them, or brought at reasonable rates from Pacific's golden shore.

Though we may not, at present, be able to compete in their own markets, with the cheaper labor of parts of Europe and Asia, there is no reason why, with proper intelligence, we may not produce our own silk as cheaply as it can be brought here from these countries; and I am convinced that should we ever be cut off by war, from those countries on which we rely for our present silk supply, we can easily fall back on our own resources; and there are few parts of the United States better adapted to to the raising of silk than your own State of Kansas. Even now, there is no reason why the young people, and those unable to do harder work, in thousands of families, should not spend a few weeks yearly in the pleasant work of producing cocoons. The spinning wheel and distaff have been superseded and driven from the household by modern machinery; and the time which used to be given to their working in former days, might be profitably devoted nowadays to silk-raising and reeling. Such a substitution of the finer for the coarser fiber would indeed be typical of our modern civilization and progress, compared with the old.

Not many years have elapsed since grape culture was considered impracticable in this country, while the practicability of pisciculture is only just now beginning to be real-

[Concluded on fourth page.]

THE INDUSTRIALIST.

THURSDAY, NOVEMBER 16, 1876.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Look Out for the Rabbits!

The g-hoppers are gone. The last one deposited her last batch of eggs a day or two since, and we may conclude that with the ice one and one-half inches thick she will not thaw out again. But in her prolonged stay here she has produced a condition of things which makes another "hopper" more than usually to be dreaded. The g-hopper has left no green thing for the rabbits, and hence we may expect early and frequent visits from this pest of Kansas fruit-growers. Already he is hopping around among our trees and taking a nibble here and there, as it may suit his fancy. Even the jack rabbit leaps about as though perfectly at home among us. The first tree that takes his fancy is just as good as dead; and we may be sure he will not look out for the poor or half dead trees. He will take his supper from the tender bark and twigs two feet from the ground, graciously leaving the lower limbs for his feebler but busy little friend, who makes up in numbers what he lacks in length of leg and strength of jaw. It is after all "the little foxes" not rabbits "that destroy the vines." Now we may be sure that these "varmints" will hold high carnival in our orchards and nurseries this winter unless they are taken care of. If you have no green wheat for the rabbits, you may expect that they will take the green bark of your trees; and they may not, under the peculiar circumstances, stop with your young trees either. They are bound to have a living unless you kill them.

Then we say, begin on the rabbits. Protect your trees at all hazards. There are a great many ways to effect this, but they all involve work. About every orchardist and nurseryman has his own way of doing this, and the success of the way depends much upon the energy and persistence. One man will tell you to get a greyhound and keep the rabbits hunted down; being no hunter, we cannot vouch for the success of this plan. Another will tell us to get a liver, or a bucket of blood from the butcher's, and rub the bloody liver or the blood upon the trees as high up as the rabbits can reach; this plan is usually effectual as long as the blood remains on the trees, but to be entirely safe will generally need renewing once or twice during the winter. It is safe to avoid any fatty substance in smearing the trees, for while we may possibly keep off the rabbits we may coax the hungry dogs to gnaw our trees, not for the bark but for the grease. One man recommends a mixture made of one pint of flour, four quarts of boiling water, and four quarts of strong white-wash, to be applied with a broom. And another recommends one part unslaked lime and two parts soft soap; slack the lime in boiling water and paint the bodies of the trees with the composition. We are trying a composition made of flour one pint, fresh lime one pint, soft soap one pint, and water enough to bring the whole to the consistency of ordinary oil paint. This we have applied to several hundred trees with a brush.

Now, we do not feel quite sure of any of these compositions, for in an emergency the rabbits may find it convenient to go through any of them. In ninety-nine cases out of a hundred they may prove all that is needed, yet they may sometimes fail. If we tie up our trees with hay, straw, or other material, we shall make a sure thing of it; and if we put on this protection so that it can remain next season, it may serve another important purpose in protecting the trees from scalding by the sun if the g-hoppers defoliate them, as they very likely may.

Of all the modes of protection which we have tried or seen tried, those plans that dispose of the rabbit suit us best. Trap him if you can, but poison him whenever and wherever it can be done. Dead rabbits eat no trees and will have no young rabbits in the spring. A pound of arsenic and a bushel of apples or sweet potatoes are a good investment at this season of the year. Quarter your apples, (or sweet potatoes will do as well,) roll them in arsenic, and scatter them over your grounds just at evening, where you find the tracks of the rabbits. Early in the morning gather up the unconsumed pieces for safety. Keep putting the pieces out each evening for a few days, taking them up in the morning, and you will have no further trouble with the rabbits unless they come from surrounding farms. In that case you must use more arsenic. We prefer the poison wherever it can be used without danger to the family or domestic animals. There should be some concert of action in the destruction of this pest of the orchardist. Our first object will be, of course, to protect our trees. Our second should be to render that protection effectual by the entire destruction of the rabbits themselves.—[Prof. Gale.

The New Enemy to Locust Eggs.

EDITOR INDUSTRIALIST:—Touching the Anthomyia egg-parasite referred to in the last number of the INDUSTRIALIST, having written to Prof. Snow regarding his specimens, he replies, Nov. 9th: "I discovered my error in regard to the parasites of Caloptenus eggs as soon as the pupæ were formed, which are surely Dipterous and undoubtedly the Anthomyia you refer to."

Yours, truly,

C. V. RILEY.

Prof. Riley on the Locust.

Prof. Riley delivered two very interesting lectures on the locust, as a part of his College course. The Commonwealth gives the following report of the substance of his views upon this question:

He described the locust from egg to wings; how they begin to hatch out in April, and keep on hatching, more or less, till the first of June; how they start on their travels, not in any particular direction, as many of our people suppose, but in any direction where provisions are to be had, eating as they go, millions always perishing from debility and starvation. When they have attained their pupa state they diminish in numbers by disease, enemies and cannibalism. Those that attain wings fly as the wind permits to the northwest. By this time they are generally diseased and do little damage when they light. When half grown the young locusts do not travel farther than three yards a minute on a good road, and they do not as a rule travel over five miles from the place where they are hatched. They travel on an average of six hours a day, but many days they do not travel at all and their unfledged existence terminates in from six to eight weeks.

During this period, and in all his days, the locust has many enemies. Domestic fowls snap him up; hogs eat him by wholesale; nearly all the birds go for him; one, the butcher bird, impales him on thorns; and toads, frogs and snakes lay low for him. He has numerous insect enemies; wasps, ants and some kinds of flies pursue him. Prof. Riley gave an interesting account, with illustrations, of the different insect enemies of the locust. First, of those which attack the eggs, enumerating four which had never been noticed till the present year and each of those which affect the active locust.

All these agencies need, however, to be reinforced by man, and a considerable portion of Prof. Riley's lecture was devoted to a statement of what man had done and may do to destroy the locust. It should be understood that the locust is a very ancient institution, and has been fought by man for ages and ages. The most effective warfare is the destruction of the eggs, and the best method of doing this is by harrowing or dragging the ground as early in the fall as possible. But if the eggs are suffered to hatch, then the infant locust must be disposed of, and the best thing to do then is to ditch. A ditch one foot wide can be hopped across, a three foot ditch gives room to crawl out, and the golden mean will be found in a ditch two feet wide and two feet deep. The ditch is the best thing out for the locust in his incipient stages. Prof. Riley mentioned many other methods, but on the whole his advice was to make the locust die in the last ditch.

After the locust has got his wings, he is invincible. People can do little or nothing against him. Crops should be planted that mature before he arrives.

Prof. Riley discussed the question of legislation, and said that the bills introduced by Senator Harvey or Senator Ingalls would either of them have been productive of good had they been passed without modification. The legislation desired is the offer of bounties by the State not counties; the payment of the bounty to the collector of the eggs or young insects by the collector of revenue of the county, who looks to the State treasury for re-imbursement; the bounty to be four to six dollars per bushel for

eggs, and sixty to seventy-five cents for young locusts in March, fifty cents in April, twenty-five cents in May, and ten cents in June.

Professor Riley devoted some time to "conclusions," which may be summed up as follows:

The last Rocky Mountain Locust of the season of 1876 will be dead in a few days, but the eggs are hid in the ground in countless millions. The question is, what will become of these eggs. If but one-tenth of these eggs hatch they will produce locusts enough to devour every green thing. Prepare for the emergency.

1. Don't burn the prairies this fall, but in the spring when the young locusts hatch, burn everything.

2. Save all the straw, old hay, and cheap combustible material you can until spring.

3. Use the harrow now; the revolving harrow on newly burned ground and a sharp-toothed harrow on bare and uncultivated places along the roadsides.

Ditch and commence at once. Employ the first two weeks of spring plowing-time in ditching, deep plowing and harrowing. Don't plant till you have done all you can to kill off the locusts.

Sow your grain in "lands" 50 to 100 feet wide with ditches between them. If your wheat is up, make ditches at intervals through the fields.

Organize for concerted action.

Demand the legislation asked for at the Omaha conference.

Keep a stiff upper lip and don't ask outside aid whatever happens, and remember there is no insect that cannot be overcome if attacked at the right time, in the right place, and with a sufficient force.

THE INDUSTRIALIST.

THURSDAY, NOVEMBER 16, 1876.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:40 A. M.
Going West..... 3:52 P. M.

FREIGHT ARRIVES.

Going East..... 12:20 A. M., and 11:35 P. M.
Going West..... 5:15 A. M. and 5:45 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

We had our first winter storm this week.

The Executive Committee met last Tuesday.

Number of students enrolled this term, **177.**

The Farm has corn enough to last it till 1879.

Mr. E. T. Architect has presented his report on the new buildings.

Prof. Kedzie has an admirable photograph of the new laboratory.

Since last report Henry M. Jones, of Wabaunsee, Wabaunsee county, has been assigned.

The time-table for next term is on the stocks. When finished it will be launched through the INDUSTRIALIST.

By Thanksgiving day the annual reports of the several heads of departments, together with invoices, are due.

The last day of November being Thanksgiving day, the monthly examinations will be held on Friday, November 24th.

Mr. and Mrs. George Gale came down from Milford Tuesday, on their way to Vienna to attend the wedding of Mr. Wm. Zimmerman and Miss Flora Benedict, which takes place this evening.

It is hereby known that any person or persons desiring to purchase pure-bred Berkshire boar pigs at $10 each, can be accommodated by calling on or addressing A. A. Stewart or Ed. Hunting, Manhattan, Kansas. 30-tf

As a State Institution, endowed by the national government, the Agricultural College, in obedience to the proclamation of the President and Governor, will duly observe Thursday, November 30th, as a Thanksgiving day.

Mr. Chas. Davis, of the Tribune, Junction City, called on us Friday afternoon just after our recitations closed, and after looking through our office took a stroll through the different buildings. Glad to see you, Mr. Davis. Come again, when we are in motion.

The Spirit of Kansas "drops into poetry" thusly:

The Agricultural College, at Manhattan, has recently bought a Durham bull called "Duke of Jubilee."

Phœbus! what a name
To fill the speaking trump of college fame!
Bully for Jubilee!

The Board of Regents stands adjourned to meet Tuesday, December 5th, at early candle-light. The doors will open at half-past six, and the jog begin at exactly seven o'clock. The procession will form at the supper-table and move at its own sweet will. No postponement on account of the weather. No reserved seats. Any member not present will be shot on the spot. The above were a few of the official remarks made by the Executive Committee, all being designed to impress upon the members of the Board the necessity for the prompt attention of each and every Regent.

This week the seats in the College chapel have been numbered, and the students are now arranged in alphabetical order. The monitor, glancing along the seats, can readily detect the missing ones, who are promptly "black-marked," which same deducts five-tenths from the monthly grade.—News.

Students' Column.

On Thanksgiving evening, Nov. 30th, an amateur dramatic troupe, selected from among the members of the Alpha Beta Literary Society, of this Institution, designs giving an entertainment in Peak's Hall, in Manhattan. This entertainment will be given under the auspices of the above-mentioned society, the proceeds to be expended in the purchase of a library, and will consist of the well-known drama entitled "Among the Breakers," and the laughable farce, "Thirty Minutes for Refreshments." Below will be found the cast of characters:

"AMONG THE BREAKERS."

David Murray, Lighthouse Keeper.....J. S. Griffing.
Larry Divine, his Assistant.....C. S. McConnell.
Hon. Bruce Hunter.....G. H. Failyer.
Clarence Hunter, his Ward.....W. P. Burnham.
Peter Paragraph, Newspaper Reporter, S. M. Ward.
Scud, Hunter's colored Servant.....A. A. Stewart.
Minnie Daze, Hunter's Niece.....Miss Ida Willey.
Bess Starbright, a Castaway.....Carrie Humphrey.
Mother Carey, Fortune-Teller....Miss Lucy Knipe.
Biddy Bean, an Irish Girl.....Miss Cora Neale.

"THIRTY MINUTES FOR REFRESHMENTS."

John Downley, a bachelor.....S. M. Ward.
Clarence Fitts, his colored servant...A. A. Stewart.
John Foxton, young married man...D. A. Beamer.
Major Pepper, U. S. A.....W. C. Howard.
Mrs. Foxton.....Miss Ella Child.
Arabella Pepper, maiden lady....Miss Kate Cotton.
Polly, waiter at Highland Station, Miss Cora Neale.

The people of Manhattan have bestowed a liberal patronage on the several entertainments heretofore given by the College students, and we trust that they will think proper to attend this one, which is gotten up for the promotion of a good cause. Several of the persons whose names appear above have played before Manhattan audiences, and the people may know what to expect from them this time. As to the character of the plays, those who know the players and have attended their previous entertainments will testify to the fact that nothing will appear to which any one can urge the least objection. Admission will probably be thirty-five cents; reserved seats, fifty cents.

[Concluded from first page.]

ized; and to those who are familiar with the details of sericulture abroad, it becomes very clear that, with the endless variety of soil and climate, the production of silk might soon be added to our constantly increasing resources — especially if fostered and encouraged at the start by wise government. Had I the capital I would not hesitate today to erect a filature or reeling establishment in the very city of St. Louis, where I live, relying in a few years on getting a sufficient quantity of home-reared cocoons to obviate the necessity of importing them. The reeled silk is always in demand, and hundreds of factories in New Jersey and New York would seek the product eagerly.

Nay, more, there is still a brighter side to the picture which the future presents. Up to the present time there have been no reeling machines in America, and, though we have demonstrated the adaptability of our climate to the successful rearing of the worms, there has been no market for the cocoons. The California raisers relied on the sale of eggs and the silk raising came to a standstill there as it did everywhere else in the country in consequence. Now, there is in Kansas a man whom your people will some day learn to honor. A Frenchman of wealth, but loving democratic institutions, he bought large tracts of land in Franklin county and determined to establish the silk industry there. He has fully satisfied himself as to the feasibility of producing the silk, and seeing at last, as I argued five years ago, that the one thing yet needed to advance the industry was a reeling establishment, he returned to France, and last spring brought back with him the needed reeling machinery. Still another point: Finding that the common silk-worm would feed on the Osage orange so extensively grown in this country for hedges, I five years ago obtained through our former Commissioner of Agriculture, Col. Capron, eggs of one of the best races from Japan and commenced feeding the worms on Osage. The subsequent year I crossed these with a French race which I brought over from France. The cross I have reared each year on Osage, and the worms have grown heartier and healthier, without material diminution of silk. I hold in my hand a hank of silk reeled for me by Monsieur Boissier from the fifth generation of these Osage-fed worms, pronounced excellent by him. Indeed, it compares favorably with any silk I have seen. It is the first hank of Osage orange-produced silk ever reeled in this country. With each future year the race will become better and better adapted to the Osage orange, and by judicious selection the quality and quantity of the silk can be kept up or improved.

You need not therefore go to the trouble and expense of growing mulberry trees. Every Osage orange hedge-grower will be thankful to have his hedge trimmed, and those who do not own a foot of ground may rear a number of cocoons every year.

To Kansas belongs the honor of first starting a reeling establishment, and I say to her people: Go ahead; let every household make a point of raising a few ounces or pounds of cocoons; encourage Monsieur Boissier, both by your own efforts and through your Legislature, and from the present small beginning will yet flow one of your richest industries; and some of those in my audience will, I hope, live to see this my dream realized.—[Nationalist.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

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News, Peru. F. G. Moore & Co., Publishers and Proprietors. $1.50 per year. A newsy sheet published in the interests of Chautauqua county. 22-3m

Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-3m

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

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The Annals of Kansas, by Daniel W. Wilder. Published by Geo. W. Martin, Kansas Publishing House, Topeka. Price $5.

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Chemistry and Physics.—The most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis, Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry, Photography and Household Chemistry.

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KANSAS STATE AGRICULTURAL COLLEGE.

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The course of study for woman is more practical, and, therefore, more sensible than that found in any other institution in the United States. The studies are shaped with reference to the liberal and direct education of woman as a woman instead of as a man, and as an industrialist instead of a butterfly. Among the special features of the course are Physiology and Special Hygiene, Household Economy, Farm Economy, Gardening, Household Chemistry, etc.

The workshops include those of the Milliner and Dress-maker, Printing, Telegraph, Scroll-Sawing, Carving, Engraving and Industrial Music.

Superior advantages are offered to students of higher Chemistry, to Mineralogists, Druggists, Operators, and Workers in metals.

Full collections of the Plants, Insects and Birds of Kansas, are being made as rapidly as possible.

☞ TUITION ABSOLUTELY FREE! ☜

No contingent fees, except for use of pianos and organs in the Musical Department; and a charge of $1.00 per month for material and instruments used by male students in Printing and Telegraph Departments. Boarding ranges from $2.75 to $4.00 per week.

CALENDAR:—Fall Term began Thursday, Aug. 24th, and will close Thursday, Dec. 21st, 1876.

For further information, apply to
J. A. ANDERSON, President.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, NOVEMBER 23, 1876. No. 32.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Boiled Down.

West Atchison has a wind-mill factory.

A 4000-acre patch of wheat near Salina.

A good way to cure balky horses is to kill them.

Labette county cattle die to get rid of black-leg.

Pawnee county is jolly over its wheat prospects.

The average farm in England is thirty-three acres.

Wild rice grows east of the Neosho, below old Cherokee City.

The Scandia Republic crows over a hen's egg 6¼x9 inches.

One sale of 10,000 bushels of wheat reported by Independence Kansan.

Lincoln county planted 25,000 forest trees, most of which are doing well.

The Blind Asylum has already made over 400 dozen brooms this year.

Since the proclamation turkeys are roosting higher than ever before.

The freighting business from Coffeyville to the Indian agencies is heavy.

Twenty-nine immigrant wagons in Chetopa last Monday before eight A. M.

All the fools arn't dead yet — a Londoner has a "short-haired" cat valued at $125,000.

A greater breadth of fall wheat has been sown in Dickinson county than ever before.

For some years raising live stock in England has been more profitable than raising grain.

The Manhattan Nationalist, one of the best established papers in the State, is for sale.

South America is putting a new kind of tea in the market which promises to become a favorite.

The counties of Chase, Butler and Marion have been burned over, and many a home destroyed.

Braiding straw is a new industry adopted by the authorities for the inmates of the Blind Asylum.

When Horace Greeley told that famous young man to "go West," he only meant as far as Kansas.

The Winfield Courier pays a handsome compliment to Prof. Riley, under whom the editor formerly studied.

A Californian planted 1,000 acres of walnuts and almonds four years ago, and nets $250,000 from this year's nut crop.

Oswego has a watch made in 1750 that thinks a good deal of itself when contemplating the faces of modern watches.

When last heard from the future hopper-grasses were flying by millions into the Gulf of Mexico, probably to take a little swim.

Said that potatoes are so cheap in some parts of the State as to be really given to editors. In our judgment that is a campaign lie.

From the general tone of our exchanges we incline to the belief that there has been an election, or something of that sort, in Kansas.

German law forbids windows on more than one side of a school room, on account of injury to the eye-sight by light from both sides of the room.

This is the happy season of the year when the weary Faber-bobber obtains rest for his soul and copy for the d—— by reporting the latest batch of prairie fires.

The Junction Union says that turkeys are getting quarrelsome, which we believe to be an attempt to manufacture moral sentiment for a general war on those bipeds.

The total number of admissions to the Centennial exposition was, in round numbers, 10,000,000, against 8,805,091 at the Paris exposition in 1857. The cash receipts foot up $4,000,000, against a little over $2,000,000 at the Paris exposition.

The Careful Man.

Soon after noon yesterday a stranger entered a Woodward Avenue hardware store and asked if they kept shingle-nails there. Being informed that they had a dozen kegs on hand, he further inquired:

"Are they genuine shingle-nails, or only imitations?"

"They are shingle-nails, of course."

"Let me see them."

A handful was placed on the counter before him, and he took several nails to the door where he could get a stronger light. After scanning them thoroughly he tested two or three of them between his fingers, and said:

"Well, they seem to be all right, and I'll take five pounds. I don't want to appear captious, but I bought some shingle-nails along here somewhere about a month ago, carried them home, and what do you suppose they turned out to be?"

"Six-penny?" answered the clerk.

"No sir. They were shoe-pegs, sir!"

"That was strange," mused the clerk.

"And another time I ordered shingle nails," continued the stranger, "and the clerk put up four stove-handles, three nutmeg-graters and a coffee-mill. Can I build a cow-shed out of coffee-mills? Can I shingle a barn with stove-handles? Can I clap-board a smoke-house with nutmeg-graters?"

"Curious mistake, that," said the clerk.

"And another time, when I asked for shingle-nails, they put up four corn-poppers and a match-safe. These things have sunk deep into my soul, and you mustn't blame me for seeming particular. Now, these are nails, are they?"

"Of course."

"Shingle-nails?"

"Yes, sir."

"Just write it on this card and give me your name, the name of the firm, the number of this store and the date of the month. I don't want to make trouble, but if I find when I get home that you have put me up bath-brick and harness-snaps in the place of shingle-nails, I'll come back here and make it warm for you?"—[Detroit Free Press.

Mental Differences Between Man and Woman.

Sir George Campbell, M. P., who presided over the section of Economic Science and Statistics of the British Association, touched in his opening address upon a great variety of topics, and amongst others gave his views as to the difference between the mental qualities of men and women. He said: "As regards the education and employment of women, is there not great room for scientific inquiry on the question how far the mind of woman differs from that of man? Is there not, in fact, a very considerable mental difference between man and woman, just as there is a considerable bodily difference? Is not woman to some extent at least a different creature from man so that we may in some sort predicate that under certain conditions a man will act in one way and a woman will act in another way, in the same manner (though not in the same degree) as we can predicate that a dog will act in one way and a cat in another? To some degree, I am inclined to think that there is some natural difference, and that this difference must be taken into account in determining the treatment, the employment, and functions of women. It is because I thoroughly sympathize with the desire of so many women of the middle classes to find useful, and honorable employment for themselves, that I think scientific inquiry into the economic capacities of the creature, woman, most necessary. If we can once solve that part of the problem, the rest will be comparatively easy. I feel sure that there are many functions, whether they depend on nimbleness of finger, sympathy of heart, or quickness of intellect, for which women are especially fitted, while there are others for which their nature is less fitted, and in respect of which they will do well to avoid an unequal rivalry with man. —[Weekly Globe.

Having a Trade.

By all means have a trade. Do not go up and down the world, and find nothing you can put your hand to. You may not always be as prosperous as you are now. Thank heaven we live in no land of primogeniture, hereditary succession. Each man is bound to labor. Have something you can turn your energies to when times pinch — have a trade we repeat. Educate your hands; it will be an everlasting resource. We never knew a man who, with a good trade, failed of getting a good living, and much more with right application. What though you are going to college, or into a profession? The cause is not altered — you need it just as much. It will come in play every day in your life. Discipline of the hand should always go before that of the head. We never knew a college boy that wasn't better for a substantial trade. He always graduates with the highest honors. He is sure to be a scholar; the fact is, he knows how to work — to conquer. He but transfers himself from the shop to the study.

Young man, decide at once to learn a trade; apply yourself with all your mind and heart, and be its master; and if you are not obliged to work at it, you have laid by so much, and such a kind of wealth can never be taken from you.—[Kan. Star.

The Italian government intends to establish free schools. They are greatly needed, inasmuch as sixty out of every one hundred men in the country can neither read nor write. While Italy devotes $80,000,000 annually to her army and navy, she has hitherto given less than $5,000,000 a year to popular education.

Our farmers are rapidly getting into possession of improved breeds of stock. They find that it costs no more to keep a good animal than an inferior one. As good cattle, sheep, and hogs can be seen here as anywhere in the country.—[Coffeyville Journal.

THE INDUSTRIALIST.

THURSDAY, NOVEMBER 23, 1876.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

NOTHING gives us such exquisite pleasure as to see a man initial his first and "full" his second name, thusly: "J. Doosenberry Fitzensneezer." It even discounts the joy of beholding the chap who parts his hair on the equator.

Now that Topeka has a circus, the gentlemen of the press down there casually remark in the most nonchalant manner possible, and with an air that such items are hardly worth mentioning, that "the lion got loose last night and chawed awhile on the sacred cow," or, "the boa-constrictors were out taking a crawl yesterday afternoon and admired the prints in so and so's show window." What a nice time city editors must have!

IT is a point well worth considering whether, in view of the provision made by the State for professional, normal and industrial education, there is either equity or sense in so framing the common schools that they shall become training establishments in which to prepare students either for the University, Normal School or Agricultural College. Gov. Geo. T. Anthony has shown that where one pupil passes from the common schools into either of these institutions, one hundred and thirty do not! Wouldn't it be better to frame the instruction of these schools for the direct benefit of the one hundred and thirty-five than for that of the one?

Pass Him Round.

There is one Topeka man who has had much to do with the brilliant success which Kansas has achieved at the Centennial, but whose name we seldom hear in connection with it. We speak of Prof. Henry Worral. He has given weeks of time where others have given days, and his artistic taste and skill have been displayed in every thing. if ever a citizen of Topeka deserved an ovation from his fellow citizens it is Henry Worral.—[Commonwealth.

That is emphatically so, every word of it except one. At the Centennial a man did not particularly realize what town he came from, and generally forgot to ask what town other men used as a post-office. It was glory enough for any man that he hailed from Kansas; and for three months it wholly escaped this undersigned's memory that Prof. Worral was a "Topeka" man. He belonged then, as he does now, to the whole State of Kansas: his rare taste; rarer originality in creating unique designs; and, rarest of all, his facile ingenuity in using the diversified products of the soil for the execution of his designs,—as other artists use colors—painting with grasses, straw, seed, corn, fruit or gourds; these gifts were employed day and night, week after week and month after month in glorifying all Kansas, and all Kansas gloried in Prof. Worral. Each Kansan owned a part of his genius and flaunted it triumphantly in the face of New York, Massachusetts, Pennsylvania, and every other State on the grounds. As Web. Wilder was wont pithily to remark, Prof. Worral was emphatically "one of our things," and Kansans rejoiced in him accordingly. There is a certain kind of pleasure in the consciousness that our fellow citizens are acquainted with and appreciate one's effort to add brighter tints to the beauty of the State's renown; and we are satisfied that every visitor to the Kansas building, whether from this or other States and nations, will join in the statement that Prof. Worral is fully entitled to this pleasure at the hands of Kansas. By all means "pass him around."

The Sciences in Common Schools.

Any science may be said to have two values: first, in itself; second, in its utility. The first value rests upon the broad truth that knowledge is worth more than is ignorance. Hence, when men discover new facts in any field, or demonstrate the certainty of things which before were uncertain, they add to the general wealth of knowledge as opposed to ignorance. Nevertheless, the facts which they have determined may possess little or no practical value to the masses of men, that is, may be devoid of any quality which fits them for use in every-day life.

For example, somebody might discover that George Washington always crossed his "t's" and dotted his "i's," or that the Duke of Wellington used a gold instead of a quill tooth-pick. This somebody would have added to the general stock of facts, and in exactly the degree that knowledge is worth more than ignorance he would be entitled to a definite amount of credit. Naturally this credit would soonest and most freely be given by other gentlemen who were curious respecting the t-crossing habits of the human race, or the tooth-pick proclivities of military heroes. And these gentlemen would estimate the value of the discovery at far higher figures than would a farmer, merchant or candidate for office. It is even questionable whether that omnivorous and eagle-eyed being, the city editor, who sees an item from afar and harpoons it with a Faber, would give the new facts so much as a one-line notice, unless there was a remarkable scarcity of "destructive" prairie fires that evening. And this young gentleman, who is a deal more sagacious than the paper-borrower believes, would be entirely justified in his heartless indifference to the tooth-pick suggestion, for the simple reason that not one in one thousand of the paying subscribers, for whom he caters, cares a squeezed nickle whether the Duke of Wellington used any tooth-pick whatever, or, for that matter, had any teeth to pick. Now, these subscribers are fair representatives of the men who work for a living and live by working; and the reason why such a discovery possesses no especial interest for them is simply because they can make no use of it in their daily work.

It is not surprising then that scientists, both from a commendable desire to add to the general stock of knowledge, and because of the fact that truths which in themselves have no practical value often lead to others which have, should highly estimate the value of their speciality. Nor, on the other hand, should they be surprised by the indifference of the masses thereto. Under a republican form of government each citizen has a right to determine the value of a particular science according to its worth or worthlessness to him. Gentlemen will differ upon these as upon other matters, and no one except a bigot will object to their civic and human-natural right so to do.

When, however, a wholly different question is raised, namely, that of teaching a given science in the common schools, it seems to us that the rule in the case should be the usefulness of the knowledge which that science embraces to the masses in their daily work. All the lawyers, doctors, preachers, teachers and scientists in Kansas taken together number less than three in a hundred of those following a vocation; the ninety-seven are farmers, mechanics and business men. The money which runs the public schools is furnished by the people in about the same ratio; and those schools should be conducted for the benefit of the ninety-seven. If this be done, it certainly is clear that the introduction of a science, or the teaching of a science already in the school course, should be governed by its practical and not by its estimated value.

Credit Due.

Speaking of the credit due Prof. Worral for his work in the Kansas building, how is the rest of it going to get itself given? Somebody who is familiar with the facts of that whole Centennial movement, from its inception in Kansas to the close of the Kansas building, should write it up. It will be found years hence to have been one of the brightest pages in Kansas history. And we make the suggestion all the more freely for the reason that, though for three months daily witnessing the success of the Kansas exhibit, we had nothing to do with it.

The trouble is that no person except some one who was a prominent actor in the Kansas movement is conversant with all the facts; and while hundreds of men caught glimpses of the work in its progress, yet they could not speak fully of the work-

ers whom they saw without doing injustice to others whom they did not happen to see. The first suggestion which we remember to have heard regarding a Kansas exhibit was by George A. Crawford, before the Editorial Association at Manhattan. Our next glimpse was at the fight in the Legislature over the Centennial bill, and a pluckier one hasn't been made for many a day. In view of the abuse which its leaders had to take then, the faintest glimmerings of equity would suggest that due credit be given them now. The next glimpse was at the boxes, barrels and bundles piled in magnificent confusion in the unfinished building at Philadelphia, while Gray, Worral and a few others were sweating and working against time, odds and hope. The next had for its background the Centennial Commissioners in session, and in the foreground John A. Martin and Geo. A. Crawford. By that body all the multiform, conflicting and perplexing questions of right and policy were promptly decided; and when the magnitude of the enterprise and the glory of the success are considered, the largest measure of praise is due the men who guided and whirled it to victory. This much we happen to know that there was not a more earnest, sturdy and effective man in the party than John A. Martin; nor a more indefatigable, clear-headed and plucky one than Geo. A. Crawford. Kansas was as well represented in the Commission as it was in the exhibition; and no men wielded a more active influence.

There were so many sides to the Kansas work, and so many noble men at each side, that even to name them all would more than fill this paper. Whoever writes the internal history, which is the truest and best part of any history, will find himself saying a great deal about Gov. Geo. T. Anthony, Alfred Gray, John A. Martin, Geo. A Crawford and a host of others. Not only justice to them but justice to Kansas requires something more than a mere catalogue of names and dates.

THE INDUSTRIALIST.

THURSDAY, NOVEMBER 23, 1876.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:40 A. M.
Going West..... 3:52 P. M.

FREIGHT ARRIVES.

Going East..... 12:20 A. M., and 11:35 P. M.
Going West..... 5:15 A. M. and 5:45 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

Number of students enrolled this term, **178.**

The monthly examinations take place to-day.

Remember the Entertainment at Peak's Hall next Monday night.

If any one has lost a cape, he or she can have the same by interviewing Geo. H. Perry and proving property.

Several buckets filled with water, to be used in case of fire, have been placed in each of the College buildings.

We almost forgot to say that now is exactly the time to subscribe for the INDUSTRIALIST. Price, 75 cents a year.

Our readers must excuse the scarcity of local matter this week. The editorial page will slop over upon the local once in awhile.

We have for sale some nicely bound copies of Volume I. of the INDUSTRIALIST. You can have a copy for $1.50.

Richard C. Jones, of Brown county, post-office address Kennekuk, Atchison county, has been enrolled this week.

The Board of Regents stands adjourned to meet Tuesday, December 5th, at early candle-light. The several members of the Board are respectfully requested to bear in mind this fact.

Prof. Riley's lectures at the Agricultural College were the perfection of practical Entomology, treating of the characteristics of the insect friends or enemies of the Kansas farmer and fruit-grower, and of the best methods of preventing or destroying the latter.

Mrs. Werden's music class with a few invited friends will give an entertainment, consisting of music, pantomimes and tableaux, in Peak's Hall, Thursday evening, Dec. 14th, 1876. Longfellow's "Blind Girl of Castel-Cuille" will be rendered in tableau form. Several pieces of Centennial statuary will be represented. To meet expenses an admission fee of thirty-five cents will be charged. No reserved seats. Let all who are in search of fun be present.

Students' Column.

Since our last report Messrs. Irving Todd and W. C. Campbell have been elected members of the Webster Society.

Last Saturday evening "Scud," the colored servant in the Alpha Beta dramatic troupe, dropped in a few minutes and created a good deal of amusement for the boys.

The speakers reported that they had chosen the affirmative of the question proposed by the Alpha Betas; that the debate would be held in the Webster Hall, Saturday evening, December 2d, 1876.

An attempt was made to amend the constitution, but the motion was tabled.

The question for next debate, is, "Resolved, That man is governed more by public opinion than by conscience." The speakers are Messrs. McKelvy, LaTourrette and King on the affirmative; Abbott, Harvey and Leasure on the negative.

Students who are not members will find the Webster meetings pleasant places to spend Saturday evenings. JED.

The Alpha Betas debated the following question at their last session: "Did the Crusades have a good effect over the civilization of the world?" Decided in favor of affirmative. The Indian question was pretty thoroughly discussed in an extemporaneous debate, in which considerable enthusiasm was displayed, the red man having warm friends and exceedingly bitter enemies among those present. A declamation by Mr. Weeks was very well received, ditto the essay by Miss Parker, and the recitation by Miss Cotton.

The acceptance by the Websters of the challenge to debate, sent them two weeks since, was received. They designate the evening of Dec. 2d as the time of holding debate, and the telegraph room as the place. We had hoped that they would select the chapel, where a larger audience could be received.

Owing to the fact that the Society is to give an entertainment in Manhattan next Monday evening, and that there is much to be done in the way of preparation before that time, the programme for the next meeting will be postponed, some business will be transacted, and the Society will adjourn and proceed with the rehearsal. We cordially invite all the students to this entertainment Monday evening, at Peak's Hall, and confidently assure each and every one of them that they shan't be charged more than thirty-five cents each.

The next question for debate reads: "Should the present system of insurance be encouraged?

THE INDUSTRIALIST.

THURSDAY, NOVEMBER 23, 1876.

Mr. GEORGE GRANT, the founder of the Grant Colony in Kansas, is now importing more fine stock for his western farm. Among these are eight head of high class shorthorns of the noted Booth strain. These were selected by Mr. Grant last spring, and bought from her majesty Queen Victoria of England, from the late Prince Consort's homestead farm at Windsor. —[Junction Union.

Nails will weigh as follows: Seven inch spikes, five will weigh a pound; sixty-penny nails, nine to the pound; forty-penny, thirteen; thirty-penny, twenty-three; twenty-penny, thirty-four; twelve-penny, forty-eight; ten-penny, fifty-eignt; eight-penny, eighty-nine; six-penny, one hundred and fifty-three; four penny, or shingle, three hundred and four.

Poor Girls.

The poorest girls in the world are those who have never been taught how to work. There are thousands of them. Rich parents have petted them. They have been taught to despise labor and depend upon others for a living, and are perfectly helpless. If misfortune comes upon their friends as it often does, their case is hopeless. The most forlorn and miserable women belong to this class. It belongs to parents to protect their daughters from this deplorable condition. They do them a great wrong if they neglect it. Every daughter should be taught to earn her own living. The rich as well as the poor require this training.—[Kansas Star.

A near-sighted man out on South Hill went wandering around among his currant bushes yesterday afternoon, and stooped down and pulled a live Centennial wasp's nest up by the roots to see what it was. He didn't get it anywhere near the focus of his eyes before he had and idea that it was a flat-iron some of the women had set out to cool; then he thought it might be a concentrated case of prickly heat; and then it dawned upon him that he had picked up a raw thunderbolt; and finally his heart went clear down into his boots as he realized that he had got hold of the dangerous end of the Hell Gate explosion, and pulled it off. And he doesn't know any better yet.—[Hawk-Eye.

Closing cracks in cast iron stoves: Good wood ashes are to be sifted through a fine sieve, to which is to be added the same quantity of clay finely pulverized, together with a little salt. This mixture is to be moistened with water enough to make a paste, and the crack of the stove filled with it. The cement does not peal off or break away, and assumes an extreme degree of hardness after being heated. The stove must be cool when the application is made. The same substance may be used in setting the plates of a stove, or in fitting stove-pipes, serving to render all the joints perfectly tight.—[Ex.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

Press, Girard. Established 1869. Official paper of county and city. Republican in politics. Wasser & Riddle, Editors and Proprietors. 22-3m.

News, Peru. F. G. Moore & Co., Publishers and Proprietors. $1.50 per year. A newsy sheet published in the interests of Chautauqua county. 22-3m

Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-3m

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

The Annals of Kansas, by Daniel W. Wilder. Published by Geo. W. Martin, Kansas Publishing House, Topeka. Price $5.

Township Books, Poor Records, Estray Records, Poll Books, Official Records, furnished by the Kansas Publishing House, Topeka.

Chemistry and Physics.—The most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis, Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry, Photography and Household Chemistry.

Kansas Publishing House.—Standard Stock, Standard Work, Standard Prices, to be had at the Bindery and Blank Book Manufactory of George W. Martin, Topeka, Kansas. Orders from counties and townships solicited. All sorts of books made, bound and rebound. Legal Blanks, Seals, Stationery and Job Printing.

English Language.—The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive. Drill in English, History of English, Structure of English, Study of Words, and Rhetoric. Constant practice in the class room, and, if desired, at the printer's cases.

Printing!—Daily instruction and drill in the work of a First-Class Printer. The Literary Departments offer a thorough education in the construction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping; and in Industrial Drawing, as the best developer of that taste necessarily exercised by every good Job Printer. The Printing Department is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer. Besides regular class instruction in printing, the weekly publication of the INDUSTRIALIST by the Department furnishes advanced students the requisite drill in newspaper work.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, NOVEMBER 30, 1876. No. 33.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Boiled Down.

Congress meets next Monday.

Wellington is boring for coal.

The Scandia dam is nearly finished.

The bean crop of Kansas is enormous.

Leavenworth dog tax yields $1,875 this year.

Labette county rabbits are chawing the trees.

Wyandotte buys hickory wool at $5.00 per cord.

Canada ships manufactured articles to Australia.

Hay bound upon trees protects them from rabbits.

And now it is pea-nuts which Kansas ships to Ohio.

Berlin has a church, seating 1,000 persons, made of paper.

The State Grange meets at Manhattan, December 12th.

Slack water navigation is suggested for the Neosho river.

Boss Tweed "who was to have arriven, has arroven."

The latest invasion is that of cheap jewelry swindlers.

January 7—14, 1877, will be observed as a week of prayer.

A Two-story street car is the last agony in New York City.

A Canada colony has bought land in Washington county.

Two herds of Colorado cattle are wintering at Minneapolis.

The Commonwealth is preparing a large edition for Christmas.

Allen county defeated the herd law proposition by 602 majority.

Parsons and Brownsville are talking of a narrow-gauge railroad.

Lincoln county is being punctured with a large number of coal shafts.

Peabody rejoices in an unlimited supply of antelope, deer and rabbits.

According to the Union, Junction City ships an enormous amount of grain.

Dr. Challis, of Atchison, has sheared 4,000 pounds of wool from his 1,500 sheep.

According to the last Arctic expedition the length of a polar night is 145 days.

People who are so fortunate as to have nickles must look out for the "lead" counterfeit.

All men are not homeless, but some are home less than others, which is a distinction with a difference.

One of the California big trees is 150 feet in circumference, and this hasn't been a good year for trees either.

For one we are obliged to the Commonwealth for furnishing the post-office addresses of the members of the next Legislature.

The State Sabbath School Convention will be held at Wyandotte, December 5, 6 and 7. For information, address H. Clarkson, Topeka.

What is the difference between spermaceti and a school-boy's howl? One is the wax produced by the whale, and the other is the wail produced by the whacks.

The Junction City school-house is heated by a $625 furnace. Wouldn't it be cheaper to "warm up" the youngsters in the old hickory way familiar to their dads?

They are putting on airs out at Hays City; and the last agony is the ridiculous suggestion that a visitor ought to knock at the door before entering a neighbor's house.

The Rocky Mountain Locust.

In the Kansas Farmer we find the text of Prof. Riley's lecture on the locust, and extract as follows:

REMEDIES AND PREVENTIVE MEASURES.

The means to be employed against the ravages of this insect in the most fertile country subject to its periodical visitations, but in which it is not indigenous, may be classed under five heads: 1. Natural agencies; 2. Artificial means of destroying the eggs; 3. Such means of destroying the unfledged young; 4. Remedies against the mature insect; 5. Prevention. I shall treat here briefly of these different means, bringing together the more valuable experiences of the past by repeating much that I have elsewhere written.

1. NATURAL AGENCIES.— It is fortunate for man that, as in the case of noxious insects, this locust is not without its enemies. Chickens, turkeys and hogs devour immense quantities, and are happy during years of locust invasion, or whenever these insects abound; prairie chickens and quails devour them with avidity, and even hunt for their eggs; swallows and blackbirds pursue them unrelentingly; the little snow-birds devour great quantities of eggs when these are brought to the surface by the freezing and thawing of the ground; and the same may be said of almost all birds inhabiting the western country in winter; for in the crops of warblers, plovers, snipe and other birds killed by the telegraph wires in the vicinity of Lawrence, Kansas, Mr. G. F. Gaumer found these eggs in the winter of 1874–5.

The good offices of birds were everywhere noticed in 1875, and Mr. Wise, of the Minnesota Commission, is of the opinion that the blackbirds and prairie chickens destroyed a large portion of the eggs laid in that State in 1875 — scratching for them after the fashion of hens. Prof. F. H. Snow, of Lawrence, Kansas, found the young locusts in the gizzards of the Red-headed Woodpecker (Melanerpes erythrocephalus), Yellow-billed Cuckoo (Coccyzus Americanus), Catbird (Mimus Carolinensis), Red-eyed Vireo (Vireo olivaceus), Great-crested Flycatcher (Myiarchus crinitus), and Crow Blackbird (Quiscalus versicolor), species that had not been noticed to feed on them before. The Shrike, or Butcher-bird, impales them on thorns and other pointed substances; and a number of other birds, as well as reptiles, e. g., toads, frogs and snakes, feed upon them. The full-grown insects are not unfrequently infested with a long thread-like worm, well known by the popular name of "hair-worm," and erroneously supposed to be animated horse-hairs. I have taken specimens from them thrice as long as the locust they came from, and belonging to both the genera Gordius and Mermis. But by far the most effective helps in weakening the vast army of locusts are the parasitic and predaceous insects, albeit their work is less noticeable and less appreciated. Passing over the few, like certain species of Digger Wasps, belonging to the genus Scolia, which occasionally bury a few specimens as provision for their young; the ferocious Asilus flies which occasionally pounce upon a specimen and suck out its juices; and the omnivorous ant which sometimes feeds on the eggs and on the weakly, sickly and disabled 'hoppers; I shall speak more particularly of those parasitic and predaceous species which render effective service to man in destroying the locust. For practical purposes these may be divided into those which attack the eggs and those which attack the active locust.

[Here the lecturer gave an account, with illustrations, of these different insect parasites and enemies of the locust, which we are obliged to omit with the remark that he described five new enemies that have not before been noticed, and that are now attacking the eggs and doing good service in destroying them.— EDITOR.]

All these natural agencies should be, as far as posssble, encouraged. We can encourage the increase of the birds mentioned by enacting wise game laws to prevent their wholesale slaughter, and we may encourage some of the parasitic and predaceous insects by importing those like the ichneumon flies, known to attack locust eggs in Europe, and by introducing some of the species I have enumerated into parts of the country where they do not occur; but in the main these insect enemies of our locust are beyond man's influence, and they will do their appointed work without his assistance.

ARTIFICIAL MEANS OF DESTROYING THE EGGS.

In the destruction of the eggs, man can accomplish much in his warfare with the insect. This fact has long been recognized in all European and Asiatic countries that suffer from locust depredations; and in France, Italy and several other countries, a reward of so much per kilogram, or other measure, is always offered by the government whenever agriculturists suffer from invasions. When we consider the number of persons rendered destitute in Kansas, Minnesota and Nebraska by the invasions of 1874, and the danger of the immense damage that threatened the following spring, from the issue from the eggs which in many places filled the ground, it is surprising that the Legislatures of these States did not give the inhabitants of the ravaged counties at once the means of warding off misery and suffering, and guarding against future destruction, by offering a liberal price per bushel for locust eggs. I sincerely hope that the lesson of 1875, in this respect, will not go unheeded, and that all the States interested will enact bounty laws.

The eggs are laid in masses, just beneath the surface of the ground, seldom to a greater depth than an inch; and high, dry ground is preferred for the purpose. Very often the ground is so completely filled with the egg masses that not a spoonful of soil

[Continued on fourth page.]

THE INDUSTRIALIST.

THURSDAY, NOVEMBER 30, 1876.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE next term of the Agricultural College will begin on Thursday, January 4th, and close Wednesday, May 23d, 1877. Judging from the number of inquiries received at this office there will be a larger attendance than at any previous term.

THE Board of Regents will meet next Tuesday, Dec. 5, for the transaction of such business as may regularly and constitutionally come before it. The heads of the different departments will present their annual reports, and the wants and necessities of each will be carefully considered.

Three Years.

By the appointment of Gov. Thos. A. Osborn, and in accordance with an act approved March 6th, 1873, a new Board of Regents assumed control of the Kansas State Agricultural College, on the 1st day of April, 1873. During that summer radical changes were made; and on Sept. 3d, 1873, the Board officially declared the line it proposed to follow in these words:

"For the purpose of defining the policy of the Board of Regents of the Kansas State Agricultural College, and as a guide to the Faculty in preparing a new curriculum —

"Resolved, That the object of this Institution is to impart a liberal and practical education to those who desire to qualify themselves for the actual practice of agriculture, the mechanic trades or industrial arts.

"Prominence shall be given to agriculture and these arts in the proportion that they are severally followed in the State of Kansas.

"Prominence shall be given to the several branches of learning which relate to agriculture and the mechanic arts, according to the directness and value of their relations."

During the past three and one-half years this line has been strictly followed, not merely in profession, but in spirit and fact. The course of instruction, which as certainly determines the direction of the student's progress as do the iron rails the direction of the train's movement, has been rebuilt and fully conformed to this policy. The several departments of instruction have been entirely reconstructed; and are manned by able and enthusiastic specialists, harmoniously working with brain and hand for the speediest attainment of the designated object. To the outer limit of the facilities at their disposal, both the Regents and their appointees have used all legitimate means and made every effort to put within the easy reach of the working classes of Kansas, exactly that knowledge and physical drill which are of most value to those who expect to earn a livelihood by farming or the other industrial vocations.

A party of gentlemen may agree to visit foreign countries, and, by using the proper means, execute their purpose. On returning they may state, without vanity or egotism, that they had procured valuable articles which were the only ones of the sort in this country. It is in exactly this and no other spirit that, in speaking of the progress made in developing the policy adopted by the Board in 1873, we claim that Kansas has an Agricultural College which differs radically and advantageously from all other institutions in the United States; that it furnishes a mental education having less superfluous bosh and possessing more real value to the boys and girls who will have to make a living by working than can be obtained elsewhere; and that it affords a manual training which cannot be found elsewhere.

Centennial Prizes.

The average newspaper reader is puzzled to learn who got the first prize at the Centennial for pianos, sewing machines, etc.—[Ex.

The perplexity of the average reader may be increased when he learns that nobody got a "first," "second" or "third" prize. The Commission adopted a wholly different method; one which, while it may not prove quite so satisfactory to exhibitors advertising their wares, will, when fully understood by the people, be accepted as a more sensible and equitable system than the old one.

The instructions to the Judges were substantially as follows: After a careful examination of the articles entered for competition in your group, you will determine what the standard of excellence shall be. Articles which fall below this standard will be so reported; articles which in your judgment are above this standard, and therefore worthy of notice, you will recommend for a diploma, in each case giving the exact reasons for your opinion. All of these reports will be forwarded to the Bureau of Awards for final examination, and by it to the Commission for final action. When an award is made, the exhibitor will receive both a diploma and a medal. The medal is simply an evidence that a diploma has been issued, and the language of the diploma will determine the relative value or "grade" of the article exhibited.

Usually the language of the diploma is a copy of that used by the Judges in giving the grounds for their recommendation; and, in framing their reports, they endeavored to "grade" their opinion of articles in the same class. Hence a medal is akin to the seal on a deed; and the wording of the diploma, like the wording of a deed, is the main point in the case. For example, suppose the following diplomas issued to exhibitors of sawing machines: No. 1, "A serviceable machine;" No. 2, "For simplicity, durability, efficiency and economy;" No. 3, "For an ingenious device enabling the operator to adjust tension while the saw is in motion;" No. 4, "In all respects the best of its class." From this it would be clear that, in the opinion of the Judges, No. 1 was just up to their standard, by a tight squeeze; that No. 2 was a superior machine; that nothing about No. 3 except the adjustment was recommended; and that No. 4 was the best. All of these machines the Judges believed to be worthy of notice, because better than say twenty others which they reported against. In respect to each they said just what they thought; no more, no less. They believed the inventor of No. 3 to be entitled to credit for the ingenuity of one device, and assumed that the "reader" had sense enough to see that this device was only one of a dozen elements necessary to efficient work.

The Commission adopted this mode of awarding prizes because of the failure of the graded system at previous World's Fairs. Any one who will consider the practical workings of the latter will see that it must fail where first-class articles are in competition. Imagine yourself as a Judge called upon to decide between the best Chickering and Steinway pianos. All experts agree that, as a machine for making music, each is as near perfection as human skill and care can make it. Whatever difference there may be will be one of gilt-edged fancy or of a taste so rarefied as to be without real substance. You would say that, if you must award a first prize to the one and a second to the other, your vote would be for S. Another Judge would vote for C. Neither of you, to save your souls, could give a reason satisfactory even to yourselves for your choice; and both would admit that each of the instruments deserved a first prize. Yet under that system only one could be first, though in fact both were first; and either the system would have to be smashed and the truth told, or else the truth would have to be smashed and an injustice done. The result has been at all the World's Expositions that Judges have virtually abandoned the system; and we heard many distinguished European gentlemen, who had served as Judges at London, Paris or Vienna, give a higher measure of praise to the "American method" of awards than to any other single feature of the Centennial. The fact is that when a group of Judges is required to decide between two ribbons that are exactly alike except that one is blue and the other red, either they will award the first prize according to a personal preference for color, or they will decline to act at all. As before remarked, until the American method is understood it will excite no little comment; but when understood it will be generally endorsed for practical sense and fairness.

THE INDUSTRIALIST.

THURSDAY, NOVEMBER 30, 1876.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 12:20 A. M., and 11:35 P. M.
Going West..... 5:15 A. M. and 5:45 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

Number of students enrolled this term, **180.**

The sessions of the State Grange, beginning Dec. 12, will be held in the Manhattan court-house.

The mechanical department is busily engaged in making the tables for the horticultural building.

Since our last report George A. Jeffery and William J. Jeffery, of Riley county, have been enrolled.

Better work and more of it to the cubic week than ever before is the characteristic of the present term.

Thanksgiving night was the first really cold one of the season; the thermometer shrinking down to zero.

The Kansas Pacific trains, under the new time-table, leave Manhattan for the East at 10:02 A. M., and for the West at 5:46 P. M.

Where this term has stowed itself away is a mystery. It is closing before any of us realized that it had gotten itself fairly going.

The farm department has sold during the week to Wm. P. Higinbotham, Manhattan, Kas., a pair of Berkshire pigs, and to Joel Maltby, Salina, Kas., one Berkshire boar pig.

Our herd of Shorthorns has grown apace during the past week. We have to report the recent arrival of two very handsome red heifer calves, one from Grace Young 5th, the other from Grace Young 4th.

Husking on the College farm ended a week ago. The total yield of the 24 acres of corn grown this year, so far as we have the "returns," is 1,350 bushels. The "official count" will not alter these figures materially.

Mr. E. Snyder, of Highland, Doniphan county, has presented the horticultural department with a box of very fine plants, for which Prof. Gale desires us to return thanks. Mr. Snyder is the father of Miss Ella Snyder, one of our students.

The cow, Grace Young 4th, mentioned above, has made a record not often surpassed in Shorthorn history. She is now six and a half years old and has five living heifer calves, four of which may now be seen upon the College farm, and a neater lot would be hard to find anywhere.

Great preparations are being made for Mrs. Werden's entertainment which will be offered to the public Thursday evening, Dec. 14th, 1876. Fine music, both vocal and instrumental, is being prepared, and will add new charm to drama and tableaux. As the statuary is first upon the programme let all go early. Admission, 35 cents; children, 15 cents.

Willie B. Marlatt, one of our youngest students, died last Saturday, Nov. 25, at 1:30 P. M. He had been suffering for several days from a severe attack of diphtheria, but was reported as almost well again. The tidings of his death came with the greater suddeness and produced a profound feeling among his fellow-students and teachers. He was buried from the residence of his father at 3 P. M. Sunday, the students marching in procession as an escort. Willie was a gentle, promising boy; and his parents have the truest sympathy of his fellow-students and all the officers of the College.

The members of the Alpha Beta Society deserve credit for the energy and push displayed in preparing their late entertainment, and the players merited the applause and words of praise which the audience bestowed upon them. After paying all expenses, forty dollars remain as the result of the Society's efforts to earn money to start a library, and in these hard times is good evidence that the whole affair was a success. The following report of the exercises on Monday evening is clipped from the Nationalist:

The Dramatic Entertainment given by the Alpha Beta Society, on Monday evening, had a large audience of appreciative listeners.

The Drama, "Among the Breakers," was well brought out by J. S. Griffing, G. H. Failyer, S. M. Ward and A. A. Stewart, supported by an efficient corps of ladies and gents. We have not time to do justice by special mention to each when all did so well, but can not forbear speaking of "Scud," as he was a bright, particular "star" upon this occasion. So inimitably did he represent the colored persuasion that we are sure was there an "American citizen of African descent" in the house, he must have groaned in spirit at being thus eclipsed. We were surprised, and yet we knew that A. A. Stewart would do whatever he undertook to do, and if it happened to be Scud he would scud well.

G. H. Failyer, in his favorite role of an elderly gentleman of culture, did the part of Hon. Bruce Hunter to perfection. His voice and manner are particularly fitted for the character, and he did the pathetic we thought quite naturally

J. S. Griffing entered into the somewhat tragic character he represented with more spirit than is usual with amateur actors, and did his part well.

The "so romantic" Miss Minnie Daze could not have been represented with more fidelity than by Miss Willey; and we shall always think of her as carrying the gun, frying the buffalo steak, etc., while Peter Paragraph scalps the noble red man,—"so romantic."

Miss Carrie Humphrey as "Bess Starbright" made a charming little fisher girl. Indeed, all the ladies did well in the drama as well as in the laughable farce, "Thirty Minutes for Refreshments," which followed, in which everything gets terribly mixed and John Downley (S. M. Ward), a cadaverous, forlorn and hungry bachelor, becomes the greatest sufferer, owing to the blunders of his colored servant, Clarence Fitz; but peace being at last restored, the audience depart well pleased with the evening's entertainment. ***

"Jed" and "Old Student," of the Agricultural College, are having a little tussle in the INDUSTRIALIST. They evidently intend becoming editors. —[Cherokee Republican.

Owing to a delay in the receipt of a new supply of chemicals, the class in Inorganic Chemistry have been obliged to postpone their practice in laboratory. Hence the pale, wilted look seen on their faces; they are pining to get back and break more of the Professor's glassware.—[News.

Students' Column.

We submit the following sensible directions for the careful consideration of the members of the printing class:

"F the B m t
Put :
F the B .
Putting :"

Last Saturday evening the Websters passed the following amendments to their By-Laws:

SEC. 1. No member shall perform two duties at the same meeting.

SEC. 2. No member shall perform the same duty at two consecutive meetings, unless not enough not debarred by section one are present.

SEC. 3. Section one and section two shall have no reference to official duties, extemporaneous speaking, nor debating upon any motion.

H. M. Jones and L. A. Salter were received as members.

Next Saturday evening comes the public debate, when the "little" Websters are expected to cope with the illustrious "seniors" from the Alpha Betas. JED.

EDITOR INDUSTRIALIST:—Please publish the following notice regarding books which belong to the Webster Society library:

Any person having either of the following books, or knowing of their whereabouts, will please return them or send the undersigned committee such information as will lead to their recovery: Innocents Abroad; Prescott's Conquest of Mexico, Vol. 2; Livingstone's Explorations; American Debater, (McElligott); Books and Reading; Peg Woffington; Golden Grain; Joshua Marvel; Terrible Temptation; Watts on the Improvement of the Mind; Smithsonian Report of 1871; Explorations in Africa; War on the Border, (a history of war in Kansas).

By order of the Webster Society.

H. C. RUSHMORE,
JOHN KING,
C. F. TRAVELUTE,
Committee.

The Dramatic Entertainment, given by the members of the Alpha Beta Society last Monday and Tuesday evenings, was well patronized by the best class of Manhattan citizens; for which said Society is truly obliged.

In addition to what has already been said of different ones participating in the plays, the names of Miss Cora Neale, W. P. Burnham and C. S. McConnell should be specially mentioned. They had leading parts, gave close attention to the work, and did the Society and themselves credit by their prompt, distinct recitations and unobjectionable acting while on the stage.

There is one member of the Society, who, though not seen on the stage by the audience, contributed as much to the success of the pieces as any. That person is Mr. Wm. Ulrich, who, as a general manager of stage property, and arranger of everything outside of the literary part, had all things so fixed that no waiting, no blunders, no blanks nor deficiencies of any kind occurred.

We vote the whole thing a decided success for all, and can assure those who invested their dimes and nickles therein that every cent will be spent carefully and for the most of the best reading matter for a library that it is possible for the Society to purchase.

[Continued from first page.]

can be turned up without exposing them, and a harrowing or shallow plowing will cause the surface to look quite whitish as the masses break up and bleach from the exposure to the atmosphere.

Plowing the eggs under deeply destroys them either wholly or in great part, and if some survive the young hatch so late the next season that their power for harm is much lessened; and the horses, also, in the ravaged districts, are in much better condition to plow in the fall than they are likely to be in the following spring. Care should be had not to bring the eggs turned under in autumn to the surface again, by plowing the same land the following spring, for, thus brought to the surface, the eggs more often hatch.

The experience as to deep plowing under of the eggs is somewhat conflicting, and in some light, dry soils the larger number of them will hatch late if turned under a foot; yet from my own observations and a vast amount of experience gathered together, I can recommend it as profitable. If delayed till spring it should be done just as the young begin to hatch, as it is then most effectual. Irrigation, or alternate submerging and drying of land, is also useful in destroying the eggs, and where the ground is light, excessive moisture rots them. Just as excessive moisture is fatal to the eggs, so is excessive dryness, or direct exposure to the atmosphere so that they receive alternately the direct rays of the sun and the rains and dews. Consequently, harrowing or dragging the ground in the fall where these eggs are laid, so as to break up the glutinous masses and expose the eggs to the influences mentioned and to the more easy detection of birds and the other enemies spoken of, is greatly to be recommended. Of course none of these measures, except the first, or collecting the eggs, are applicable on a large scale, except where the country is thickly settled and cultivated fields abundant. Whenever hogs and cattle can be turned into the fields where the eggs abound, most of these will be destroyed by the rooting and tramping. All these means are obviously insufficient, however, for the reason that the eggs are too often placed where none of them can be employed. In such cases they should be collected and destroyed by the inhabitants.

Experience, as well as my own observations, indicates that all of these methods of destroying the eggs, harrowing or dragging the ground as early in the fall as possible is the most simple and satisfactory, and can be most generally and cheaply employed.

DESTRUCTION OF THE YOUNG OR UNFLEDGED LOCUSTS.

The war waged against the young insects in the spring of 1875 was energetic and untiring, and everything that human ingenuity could conceive was employed in the conflict. Trapping, burning, tramping, poisoning, and trenching, were resorted to. In some cases whole acres were surrounded with boards and the insects imprisoned until they starved, while in others coal tar was smeared on to fences and out-houses in order to hold fast the newly hatched swarms that settled thereon.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

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Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-3m

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26–3m

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Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Press. Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

KANSAS STATE AGRICULTURAL COLLEGE.

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Full collections of the Plants, Insects and Birds of Kansas, are being made as rapidly as possible.

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No contingent fees, except for use of pianos and organs in the Musical Department; and a charge of $1.00 per month for material and instruments used by male students in Printing and Telegraph Departments. Boarding ranges from $2.75 to $4.00 per week.

CALENDAR:—Fall Term began Thursday, Aug. 24th, and will close Thursday, Dec. 21st, 1876.

For further information, apply to

J. A. ANDERSON, President.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, DECEMBER 7, 1876. No. 34.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

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Boiled Down.

Shut the door!

Millet is good egg-producing food.

Prof. Tice predicts a severe winter.

Osage City rejoices in a "heathen Chinee."

Osage Mission eats quails at five cents each.

There are 155 acres of dogs in Labette county.

A dentis's sign—drawing, music and dancing.

Nothing further about snakes from Concordia.

One bushel of corn will make ten pounds of pork.

The Minneapolis Sentinel has a live American eagle.

There are 2,000 deserted farms in New Hampshire.

Hays City pays four cents a pound for buffalo meat.

What interjection is of the feminine gender? A-lass.

Hand corn-shellers are to be manufactured at Emporia.

Buffalo are reported plenty seventy miles from Hays City.

There are 1,300 acres of winter wheat growing in Ellis county.

Atchison is ahead this time; its citizens have the epizootic.

Universal education would deprive us of competent jurymen.

Iron ore and a bond swindler have been discovered in Ford county.

The purest chalk in the world is said to be found in Ellis county.

A printer invariably gets out of sorts when at the bottom of his case.

Look out for a fraud soliciting subscriptions for the "Fireside Visitor."

Twenty thousand head of cattle are grazing on the Medicine Lodge range.

A peacock's feathers may not point a moral, but they certainly adorn a tail.

There were 93 distinct varieties of chickens on exhibition at the Centennial.

A party of Mennonites at Great Bend were mistaken for a flock of Cotswolds.

What is the nearest thing to a cat looking out of the window? Why, the window of course.

Why was it that Jonah did not die while in the whale's belly? Because he could n t di-jest there.

A grocer in Atchison tells the Champion that snake story is true, for he has been to Cloud county and seen them.

The sixteenth volume of Supreme Court Reports, just issued, brings the cases decided up close to the judges for the first time in six or seven years.

Statistics place the number of milch cows in the United States at 13,000,000, and credit them with producing, in round numbers, 1,400,000,000 pounds of butter.

The "Type-Founder" quotes one of Ben. Franklin's sayings, thus: "If a man empties his purse into his head, no man can take it from him. An investment in knowledge always pays the best interest."

A clergyman had just united in marriage a couple whose names were respectively Benjamin and Ann. "How did they appear during the ceremony?" asked a friend. "They appeared both Anniemated and Benniefitted," was the reply.

Trace fashion to its origin and you will nearly always find that it springs from a woman with green eyes, or an elephantine foot, or a pair of shoulders on bad terms with each other, or red hair, or a tall nose, or a form like a scarecrow. It's better to get this thing down fine.

The Rocky Mountain Locust.

In the Kansas Farmer we find the text of Prof. Riley's lecture on the locust, and extract as follows:

DESTRUCTION OF THE YOUNG OR UNFLEDGED LOCUSTS.

As I have stated in previous writings, heavy rolling, where the surface of the soil is sufficiently firm and even, destroys a large number of these newly-hatched young, but is most advantageously employed when they are most sluggish and inclined to huddle together, as during the first 8 or 10 days of hatching and in the mornings and evenings subsequently. They then drive almost as readily as sheep, and may be burned in large quantities by being driven into windrows or piles of burning hay or straw. But to protect the crops and do battle to these young locust armies, especially where as in western Missouri in 1875 there was no hay or straw to burn — is by ditching. A ditch two feet wide and two feet deep, with perpendicular sides, offers an effectual barrier to the young insects. They tumble into it, accumulate and die in the bottom in large quantities. In a few days the stench becomes great and necessitates the covering up of the mass. In order to keep the main ditch open, therefore, it is best to dig pits or deeper side ditches at short intervals, into which the 'hoppers will accumulate and may be buried. We hear much talk about the powerlessness of man before this mighty locust plague; but I am quite confident that here we have a remedy that is at once thorough and effectual, whereby the people of some of the States at least may avert in future such evil as that which befalls them in spring. There have been a number of partial attempts at ditching by turning a couple of furrows with the plow. Even these will often divert the encroaching insects from their course, but they can never be relied on, and you may rest assured that whenever you hear a man declare that ditching is no protection, he refers to such slovenly, half-made ditches. No instance has come to my knowledge where a ditch, such as I first described, has failed to effectually keep off the insects. Made around a field about hatching time, few 'hoppers will get into that field till they acquire wings, and by that time the principal danger is over, and the insects are fast disappearing. If any should hatch within the inclosure, they are easily driven into the ditches dug in different parts of the field.

I have no doubt but that with proper and systematic ditching early in the season, when the insects first hatch, everything can be saved. I have seen people driving off the young locusts day after day, in their endeavors to save some small vegetable or flower garden,— their efforts eventually in vain — where one-tenth the time spent in ditching would have effectually accomplished the object.

Where the water can be let into the ditches so as to cover the bottom they may be made shallower, and still be effective. The width and depth of the ditch is important, and as experience differed somewhat I have been at pains to get the experience of a large number of correspondents addressed by circular. Many successfully used ditches two feet deep and 18x18 inches wide; those who used water found 12x15 sufficient, while the larger number used a ditch such as I have recommended, viz.: two feet deep by two feet wide, with perpendicular sides. Though the young as they get larger can jump across such a ditch. yet the fact remains, as I have had abundant evidence, that in practice they seldom do, when hatching out in this part of the country, and that even when the majority are in the pupa state, the two-foot ditch is still effectual. In the same way the chinch-bug though it has wings and can fly, yet permits itself to be caught in a ditch by millions rather than use them; and a horse though by superior strength it can defy its bit, yet in practice seldom does.

Even the larger winged Acridii and Œdipodæ tumble into such a ditch and seldom get out again. I would remark in this connection also that a ditch three feet wide, unless correspondingly deep, will be more apt to permit the escape, when once in, than a narrow one. In hopping, the more perpendicular the direction the insects must take the shorter will be the distance reached. Of course the wider the ditch, if it be correspondingly deep, the more effectual will it prove.

Next to ditching the use of nets or seines, or converging strips of calico or any other material, made after the plan of a quail net, have proved most satisfactory. By digging a pit, or boring a post-auger hole three or four feet deep, and then staking the two wings so that they converge toward it, large numbers of locusts may be driven into the pit after the dew is off the ground. By changing the position of this trap, much good can be done when the insects are yet small and huddled in schools; but all modes of bagging, netting, crushing with spade or other sharp implements and burning, which can be employed to good advantage when the insects first begin to hatch, become comparatively useless when they begin to travel in concert over wide stretches of land. The same may be said of all the mechanical contrivances to facilitate the destruction of the insects: they are useful if used in concert in a given neighborhood soon after the young hatch, but subsequently do not compare to ditching. There are a number of contrivances that have been more or less successfully used, but which I cannot treat of in details in a limited lecture.

When the insects are famishing, it is useless to try and protect plants by any application whatever. Sweetened water seemed to keep the winged insects off special plants in 1874; but it certainly has no such effect on the unfledged 'hoppers, for they "went for" plants which I had thus sprinkled even more voraciously than for those not sprinkled. Lime does not deter them; neither coal oil nor cresylic soap will keep them from eating;

[Continued on fourth page.]

THE INDUSTRIALIST.

THURSDAY, DECEMBER 7, 1876.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Stock Feeding.

The enormous corn crop of the present year suggests the question, How shall the general farmer dispose of his corn and get the very best returns for his crop? We answer unhesitatingly, by feeding the crop in good part to cattle and hogs, and by carefully storing away the remainder against the possible short crop of 1877, the result of such contingencies as drought and grasshoppers. The farmer, as a rule, can ill afford to play the part of the speculator even with his own crops; but, with corn at twenty cents, the chances are all in his favor, and to hold the present crop until the next can be seen is only to follow the dictates of common prudence.

The limits of this article forbid anything like an extended discussion of the relative advantages of the different methods of feeding. We only desire to call attention to a few facts which experimenters and careful feeders have brought out within recent times. In purchasing animals for feeding no farmer can afford to ignore the superior value of pure-bred animals and their crosses. We know of no accurate experiments made for the purpose of testing the relative values of the different breeds; but the experiments of Dr. Miles, of the Michigan Agricultural College, made for another purpose, throw much light upon this branch of the subject. These experiments were made with pigs, and were carried on through a series of years with great care for the purpose of ascertaining general data which should furnish the basis for more extended operations.

In 1870, of the pigs experimented upon, five were Suffolks, three were Essex, and four "natives." In the tabulated results of this experiment we see that the Suffolks required in feed 4.93 pounds of corn meal to produce one pound of increase of live weight; the Essex, 4.81 pounds; while for every pound of increase of the "natives" 6.13 pounds of meal were required. It is not unreasonable to suppose that a like difference would be shown in the feeding values of native and pure-bred cattle.

It is now very well understood, by those who have given attention to this subject, that young animals, providing they are able to digest the food given them, are more profitable feeders than middle-aged, or aged animals. In the experiments quoted above, forty-two animals were experimented with, the experiments being carried on through the years 1868–69–70–71. In summing up the results of other experiments, Dr. Miles has shown that during the first twelve weeks of the experiment, taking the entire series, those pigs under six months consumed 4.08 pounds of meal for one pound increase of live weight; while others over six months consumed 4.22 pounds of meal for each one pound of increase. It may be said that the difference in results is very slight in these two cases, but it must also be remembered that the difference in the ages of these animals was very slight also, many of the animals on the one side being seven months old, and on the other five months. Of course, if the pigs "under six months old" had all been say five months old, and those "over six months," a year and a half old, much more marked results might have been expected.

Finally, the degree of ripeness of an animal has an important influence both on the amount of food consumed per hundred pounds of live weight, and the cost in feed of producing one pound of increase. All the experiments with which we are acquainted, including those of the celebrated Lawes & Gilbert, of England, agree in this, that as the animal becomes fat the amount of feed consumed per one hundred pounds of live weight diminishes, while the amount of feed consumed to produce one pound of increase of live weight progressively increases. Thus, in one of the tables of the Michigan experiment we find that in pens one and three during the first four weeks of the experiment 3.89 pounds of meal gave one pound of increase; whereas, during the last month of the experiment 7.9 pounds of meal were required to produce one pound of increase. In other pens the results were even more striking than those above.

In conclusion, then, we say to the farmer who contemplates purchasing animals with which to feed off his surplus corn: first, purchase thrifty grades in preference to the native sorts, even if a larger price must be paid; second, let the animals be young and thrifty rather than aged or even fully matured; and in feeding it should be remembered that animals well fattened cost the feeder more pound for pound than animals in moderate flesh.—[Prof. Shelton.

How to Cook.

So much has been said and written by foreigners and travelled natives upon the imperfect, not to say unhealthy, style of cooking practiced in the United States, that serious efforts are being made in New York, Boston, and other eastern cities to inaugurate a complete reform. The principal objections levelled at the food we eat and the way we eat it, are, in the first place, that we eat too fast; in the second, that we gulp down tea, coffee and ice-water in proportions sufficient to derange the best regulated stomach; and, in the third, that we neither use the proper combination in dishes, nor understand properly how these dishes should be prepared. We overload instead of gratifying our stomachs, and in consequence have become a nation of dyspeptics. What every body says must, of course, to a very large extent, be true; but the only way to prove to a man that the tough beefsteak, hot cakes, and the variety of et ceteras which constitute an average American hotel breakfast, are an insult to his digestive powers is to place before him something better.

With this view, Miss Julia Corson, of New York, has started a school at her own expense and engaged a chef, Guiseppe by name, to teach the mothers and daughters of Gotham how to preserve their husbands' and sweethearts' tempers, and to turn the salle a manger into a place of longing and agreeable sensations, instead of a necessary evil through which a man must pass as rapidly as possible. Many ladies visited the opening lectures of this great man. When the chef had prepared his rechauffee of mutton, with six slices of the cold article, seasoned with dauphine sauce, onions, celery and thyme, and experimented on Scotch broth, roast beef English style, beignet soufle, potatoes a la provencale, red cabbage, and cold remolade for salads, his name and fame were established on a firm basis. The way in which this scientific person illustrated the cooking of a potato brought tears into the eyes of one professional lady cook from Ireland. The chef's apparatus is of the simplest character, and the economy and excellence of his dishes the wonder and admiration of his pupils. The classes are held twice a week, from 10 A. M. to 12:30 P. M. The terms are $10 for the course of twelve lessons, or $1 per lesson. Cooking schools of this character have proved an undoubted success in England; in Boston they have become quite the rage. We hope soon to be enabled to welcome them to Chicago.—[Inter-Ocean.

The English Wheat Crop.

Before the harvesting, Mr. James Caird, an English writer on agriculture, commented on England's position in regard to her wheat crop. He estimated that the crop would be 10,600,000 quarters. Deducting 800,000 quarters for seed leaves 9,800,000 for consumption. This is about three-fourths the amount required. Thirteen million quarters, he estimated, would be needed for consumption, and if America could not supply the deficiency of 3,200,000 quarters, he thought it would be impossible to find the wheat elsewhere. The land under wheat in Great Britain, in 1876, is 3,136,000 acres, which is 678,000 acres below the acreage of 1874 and the seven preceding years — a decline of more than twenty per cent on the average growth. The decline from the last year is 378,000 acres, but that will be more than compensated by the increased yield per acre and the higher quality.—[Champion.

An article in the Scientific American states that oak sleepers, used on a German railway, after twelve years service, had to be 74.48 per cent renewed when untreated with any preservative. The same, treated with chloride of zinc, after seven years, 3.29 per cent; impregnated with creosote oil, after six years, 0.09 per cent; pine sleepers impregnated with zinc chloride, after seven years service, 4.46 per cent. This railway has practiced using only oak sleepers since 1870, impregnating them with either chloride of zinc or creosote oil.

ONE thousand four hundred acres of land, in Marshall county, have been sold to fourteen families of Canadians, who will take possession in the spring.

THE INDUSTRIALIST.

THURSDAY, DECEMBER 7, 1876.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER, Agent.

Number of students enrolled this term, **182.**

Clay Crouse is time-keeper for the hands at work on the new railroad in south-eastern Kansas.

The laboratory and horticultural buildings are heated by large coal-burning stoves which work admirably.

We have for sale some nicely bound copies of Volume I. of the INDUSTRIALIST. You can have a copy for $1.50.

The term examinations will be held on Monday, Tuesday and perhaps Wednesday, December 18th, 19th and 20th.

Ed. F. Waring, one of our former telegraph students, is now employed in an office in San Francisco, Cal.

The Board of Regents adjourned Friday evening after a long, busy and pleasant session. No time to give details.

The young ladies of the College are holding a prayer meeting every Friday, at the close of the fifth hour, in the Sewing room.

As a mark of respect to the memory of Mrs. Geo. A. Gale, the Alpha Beta Society, of which she was a member, will not meet Friday afternoon.

The vote in the Society debate, as reported in the Students' Column, seems as much mixed up as some other voting. Both sides claim it.

"Young America" has been having a real treat this week. Several of the ponds and creeks are frozen over, and skating is the only topic of conversation among the juvenile fraternity.

Thanksgiving night was as bright as the moonlight that even California furnishes. We read telegraphic dispatches, printed in brevier type, solid, by the light of the moon. But it was rather too cold to indulge in editorials.

Prof. Platt's singing class is preparing an entertainment, consisting of solos, duetts, trios, quartetts and choruses, and will probably present it to the public Monday evening, Dec. 18, at the College chapel. There will be quite a variety, and as the admission is to be free, persons will have to come early in order to secure comfortable seats.

A. A. Stewart was agreeably surprised this morning upon meeting his father, A. M. Stewart, of Neosho, Newton Co., Mo. Mr. Stewart, Sr., has been visiting a daughter near Burlington, and came up to take a look at his oldest son. He will remain during the day only, the condition of his business rendering it necessary for him to return this evening.

The debate between the Alpha Beta and Webster Literary Societies, at the College last Saturday evening, was very interesting, and fully repaid those who attended from the city. The debate was decided in favor of the Alpha Beta Society.—[Enterprise.

The fences around B. F. Griffin's hog pastures are only three and a half feet high, but no hog or pig ever goes over them. When he first went to farming a ten rail fence would hardly keep them in. Then he had the alligator breed, while now he has none but pure bloods and crosses. The difference in the cost of the fences required around pastures amounts to more than the difference between the first cost of pigs of good breeds and poor ones. Would it not pay other farmers to fence off hog pastures when it can be done so cheaply?—[Nationalist.

Students' Column.

In our report of the Alpha Beta entertainment last week, we inadvertently neglected to mention the name of Miss Lizzie Williamson, who so ably played the part of "Mother Carey." No one connected with the entertainment deserves more credit than this lady. The person first assigned to the part disappointed the troupe, and Miss Lizzie consented to take it with only a week's time in which to prepare. Although one of the longest and most difficult parts, she played it to the satisfaction of everybody.

That competitive debate came off last Saturday evening and those Alpha Beta "seniors" have made their display. Old members are apprised of the astounding fact that their fellow Websters didn't get "scooped" after all.

The question was, "Does climate mainly determine the character of man?" The speakers were, on the affirmative, Messrs. M. F. Leasure, J. E. D. Williamson and J. King, from the Websters; on the negative, Mr. G. H. Failyer, Miss Ella Child and Mr. W. C. Howard, from the Alpha Betas. According to previous arrangements two decisions were given; one by five judges, the other by a "yes and no" vote of the assembly. The judges decided in favor of the negative; the assembly, in favor of the affirmative.

Clair M. Patee, of the Manhattan Enterprise, presided; and H. C. Rushmore acted as secretary. Quite a number were present, and many expressed themselves as being well entertained.

After the debate the Websters held a short business session. Geo. A. Cox was elected a member. After attending to some other business and assigning duties they adjourned. JED.

According to previous announcements the debate between the Webster and Alpha Beta Literary Societies came off in the Telegraph Hall last Saturday evening. By agreement, the Presidents of the Societies had chosen five persons to act as judges of the result, these being disinterested parties. They were, Mrs. M. H. Jaquith, Messrs. Jos. Davis, T. Hawkes, Geo. Firestone and 'Squire Tyrrell. In addition to the vote of the judges, it was also agreed to have a "yea" and "nay" vote of all persons present; thus giving a special and a popular vote from which the Societies could judge of the success or failure of their speakers. All the speakers were present and in good spirits. Mr. W. C. Stewart, whom the Societies had engaged to act as president for the evening, was unavoidably detained, but, very fortunately for all present, C. M. Patee, Esq., of the Enterprise, was asked to take the position. The prompt and efficient manner in which the duties of the chair were performed reflects great credit upon Mr. Patee, and insures for him the good-will of the members of both Societies.

The debate was a spirited one; the affirmative of the question, "Does climate mainly determine the character of man?" being advocated by the Websters and denied by the Alpha Betas. After the ballots were taken from the judges, the names of the remaining persons present were called, and each responded "yea" or "nay" as they pleased and if they chose. In counting the results it is found that thirty-one voted in favor of the affirmative and twenty-nine for the negative. The vote of the judges stands four for the negative, one for the affirmative. The votes of the judges being added in with the rest to determine the entire popular vote gives: Negative, Alpha Betas, thirty-three; affirmative, Websters, thirty-two So the Alpha Betas carry the day by three in the vote of the judges and by one in the vote of all persons present and voting. All voted except the speakers and three others.

The best of feeling prevailed; the Alpha Betas are satisfied, and the Websters are not mad but feel well paid for their efforts. W. C. H.

DIED.

GALE—Near Milford, Davis county, Kansas, Wednesday, Dec. 6th, 1876, of Diphtheria, MRS. MELVA S. GALE, beloved wife of Geo. A. Gale. Aged 20 years, 3 months and 12 days.

In the midst of life we are in death. Two months ago a bride; to-day a corpse. How sudden the transition! For her this life, with its joys and pleasures, its cares and troubles, its light and shade, is ended. She has gone to that other, that better land, while husband, father and mother, relations and friends, are left here to weep. But we sorrow not for her as for one who is lost, for we know that although dead yet she lives. Like the lonely worm that seems to die yet emerges from its grave a beautiful butterfly, she has passed through death unto life; and our sorrow is tempered by the reflection that sometime in the life which is to come, somewhere in the great hereafter, we shall meet again.

The deceased will be buried in the Manhattan cemetery. The funeral services will take place to-morrow afternoon, Rev. R. D. Parker officiating. Affliction with the same disease prevents the sad mother and bereaved husband from attending the ceremonies.

[Continued from first page.]

and Paris green, though it undoubtedly kills those which partake, is yet no protection to plants, because those which go on to die somewhere after partaking are continuously followed by others which go through the same experience. I gave carbonic acid gas, from a Babcock fire extinguisher, a thorough trial under many different circumstances and conditions, but without any satisfactory results. It had very little effect on them even when played upon them, continuously and at short distance. They often became numbed by the force of the liquid but invariably rallied again.

The best means of protecting fruit and shade trees deserves separate consideration. Where the trunk is smooth and perpendicular, they may be protected by whitewashing. The lime crumbles under the feet of the insects as they attempt to climb, and prevents their getting up. By their persistent efforts, however, they gradually tear off the lime and reach a higher point each day, so that the whitewashing must be often repeated. Trees with short, rough trunks, or which lean, are not very well protected in this way. A strip of smooth, bright tin answers even better for the same purpose. Encircling the tree in any of the different ways suggested for preventing the ascension of the female canker worm, puts an effectual estoppel on the operations of the young locusts above the point of attachment, for they cannot jump on a perpendicular surface. A strip of tin three or four inches wide brought around and tacked to a smooth tree will protect it; while on rougher trees a piece of old rope may first be tacked around the tree and the tin tacked to it so as to leave a portion both above and below. Passages between the tin and rope or the rope and tree can then be blocked by filling the upper area between tin and tree with earth. The tin must be high enough from the ground to prevent the 'hoppers from jumping from the latter beyond it; and the trunk below the tin, where the insects collect, should be covered with some greasy or poisonous substance to prevent girdling. This is more especially necessary with small trees; and kerosene or whitewash having Paris green mixed with it will answer as such preventives.

One of the cheapest and simplest modes is to encircle the tree with cotton batting, into which the insects will entangle their feet and thus be more or less obstructed. Strips of paper covered with tar, stiff paper tied on so as to slope roof-fashion, strips of glazed wall-paper, thick coatings of soft soap, have been used with varying success; but no estoppel equals the bright tin: the others require constant watching and renewal, and in all cases coming under my observation some insects would get into the trees so as to require the daily shaking of these morning and evening. This will sometimes have to be done when the bulk of the insects have become fledged, even where tin is used; for a certain proportion of the insects will fly into the trees. They do most damage during the night, and care should be had that the trees be unloaded of their voracious freight just before dark.

One of my correspondents, Capt. John R. Wherry, of Boonville, Mo., has suggested the use of strips of canvas, dipped in liquid sulphur and attached to stakes to be stuck in the ground. He thinks that if the strips are lit at evening the fumes will drive the insects away from the locality they pervade. The suggestion strikes me favorably as a means of protecting orchards, and I would recommend its trial. The strips should be dipped in hot sulphur, allowed to cool, and then staked to the windward of the orchard, if the wind is stirring.

Finally, most cultivated plants may be measurably protected from the ravages of these young by good cultivation and a constant stirring of the soil. The young have an antipathy to a loose and friable surface, which incommodes them and hinders their progress, and they will generally leave such a surface for one more hard and firm.

DESTRUCTION OF THE WINGED LOCUSTS.

The destruction of the winged insects, when they swoop down upon a country in prodigious swarms, is impossible. Man is powerless before the mighty host. Special plants, or small tracts of vegetation may be saved by perseveringly driving the insects off, or keeping them off by means of smudges, as the locusts avoid smoke. Long ropes perseveringly dragged over a grain field have been used to good advantage. Great numbers may be caught and destroyed by bagging and crushing as recommended for the newfledged; but as a rule the vast swarms from the west will have everything their own way. In this part of the country these invading swarms usually come too late to affect the small grains, or to materially affect corn; but further north they are more to be dreaded, and the experience of Minnesota and Dakota farmers teaches that one of the best ways of avoiding their injuries is to grow such crops as will mature early.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

Press, Girard. Established 1869. Official paper of county and city. Republican in politics. Wasser & Riddle, Editors and Proprietors. 22-3m.

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Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Expositor. Concordia. Only home paper in county. Large circulation. Large patronage. Independent. $1.00 a year. J. S. Paradis, Editor and Proprietor. 33

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Press. Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, DECEMBER 14, 1876. No. 35.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
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Department of Higher Mathematics and English.

Report of Prof. M. L. Ward for 1876.

To the Board of Regents of the Kansas State Agricultural College:

GENTLEMEN: — I respectfully submit the following report of the Department of Higher Mathematics and English for the year 1876.

The course of study is so arranged that most of the classes in English assigned me are taught during the fall term; while the classes in Mathematics come in the winter term.

During the year I have given instruction in Mathematics, Geometry, Moral Philosophy, Ancient History, Logic, and English Structure. The number of students in Mechanics was two; in Geometry, twenty-four; in Moral Philosophy, four; in Ancient History, fourteen; in Logic, seventeen; in English Structure, one hundred and twenty-five. I have had five recitations each school day during the year.

The methods pursued in teaching Mathematics have been given in former reports. With each succeeding year I find that I am able to make our course in Mathematics broader and more comprehensive. A knowledge of the fundamental principles of several branches of the Higher Mathematics and their application is of more value to the mechanic than the ability to demonstrate readily all the possible theorems that may be presented in any branch. Permit me to state in this connection that this department can not be developed farther in a practical direction unless additional facilities are furnished. We need a room properly furnished for draughting; also some new instruments for field work.

Logic was taught during the winter term. The text-book used was Coppee's. After the class had become acquainted with the principles of the science, they were required to make written analyses of select orations and addresses, applying the rules of both Logic and Rhetoric in their analyses and criticisms. The class was next divided into four sections. Each section was given a question for discussion. The arguments pro and con were required to be written out in logical form. They were then read before the class. Papers were then exchanged, each disputant being required to write out an analysis and review of his opponent's argument. These were also read and usually followed by an oral discussion and criticisms by the whole class. Without exception all the members of the class took hold of this exercise with spirit, and were greatly benefited by it. The examination of the class at the close of the term was highly satisfactory.

The class in Ancient History, embracing the fifth and sixth year students, has used as a text-book Willson's Outlines. They have read about five hundred pages this term, taking the philosophy of history in connection with the outlines. During every month of the term each member of the class has been required to write an essay upon some historical topic assigned him. Some of these essays have evinced considerable research and power of generalization on the part of the writers.

During both terms the class in English Structure was so large that it had to be divided. The course has been varied according to the needs and advancement of the students taught. The great majority of our students come to us from the district schools. Many of them are able to pass a fair examination upon the technical terms of Grammar, but we find them usually to be poor spellers and often poor readers. Judging from the attainments of those who come to the Agricultural College, these fundamental branches are sadly neglected in many of the public schools in this State. Hence we have felt obliged to supply these deficiencies as far as was practicable.

In addition to this the objects aimed at have been: first, to enlarge the vocabulary of each student and thus to increase his stock of ideas; second, to teach him how to make a proper use of this acquisition; third, to inspire him with a love for the study of the English language and literature. The English alphabet, its origin, the classification of letters according to their sounds, the rules that have marked the growth of language in regard to the change of letters, were the topics discussed in a few of the first lessons. We next took up the subject of word analysis, spending about one month on words derived from the Saxon. The class became familiar with the English prefixes and suffixes, and the formation of a large number of derivatives. They learned how to determine the primary meaning of derivative words by analysis. The next month was devoted to the Latin and Greek element in the English language. The class has learned the Latin and Greek numerals, the forms and meanings of over one hundred Latin and Greek root-words which occur most frequently in our language; also the principal prefixes and suffixes from the same source. By these exercises the vocabulary of each member of the class has been greatly enlarged. As the rules for spelling derivative words have been constantly applied, great progress has also been made in this direction. The subject of Synonyms was next taken up, the class being now prepared to understand why the English language is richer than all others in expressions nearly synonymous. Root-words in pairs, from the Saxon and the Latin, were given to the class. They were required to form synonyms derived from the same, and to incorporate them into sentences illustrating their proper use. These exercises were read and criticised in class, or looked over by myself, criticisms, suggestions and explanations being made in writing as each pupil needed. After spending a little more than two months in the work described above, each member of the class was required to write an essay on words and their uses. Some of these essays are very creditable; all show that a lively interest had been awakened in the study of the English language.

The origin and history of the English language was next taken up. These subjects were presented to the class by written lectures. The points discussed were written on the board and copied by the class. At the end of the week each member of the class was required to write out an abstract of the lectures in his own language. When these were handed in I was surprised to notice the improvement that many of the class had made since the beginning of the term in the use of their mother tongue.

To test their skill in word analysis I gave them the speech of Hon. J. S. Morrill, as published in the INDUSTRIALIST of August 5th and 12th. The words of Saxon origin were readily distinguished from those derived from the Latin, and so far as their knowledge of Latin roots extended were easily analyzed and defined.

The structure of the English sentence was next taken up, and the class was assigned exercises in sentence-building; the object aimed at being to give the class the fundamental principles in the art of expression, or the expression of thought in the best form. The confused notions of grammatical analysis which many of the class had previously acquired were a hindrance to their progress in this exercise.

Much of the work which we feel compelled to do for our students in practical English should be done in the district schools of the State. I would recommend that the examination in English Grammar be explained as follows: In English the requisites for admission into the Kansas State Agricultural College are, the ability to spell at least seventy-five per cent of common English words; to read intelligently and fluently; to write a plain, legible haud; to distinguish the parts of speech; to write a few connected sentences on any well understood topic, the rules for capitals and punctuation marks being observed.

In the department of English, maps, historical charts, and works of reference are greatly needed. Accompanying this report is a schedule of things needed, and their estimate cost each.

Agriculture is an employment the most worthy of the application of man; the most ancient, and the most suitable to his nature. It is the common nurse of all persons in every age and condition of life; it is the source of health, strength, plenty and riches, and of a thousand sober delights and honest pleasures. It is the mistress and school of sobriety, temperance, justice, religion and, in short, of all virtues, civil and military.

THE INDUSTRIALIST.

THURSDAY, DECEMBER 14, 1876.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

DURING the present term 182 students have been in attendance, of whom 115, or 63 per cent., were males; and 67, or 37 per cent., were females. The average age of the males was 18.3 years; of the females, 17.1 years; and of the whole number 18 years. They came from 42 counties or States.

DURING the calendar year 1876, 303 students have been in attendance, of whom 186 persons, or 61.4 per cent., were males; and 117 persons, or 39 (38.6) per cent., were females. The average age of the males was 18.5 years; of the females, 17.4 years; and of the whole number 18 years. This is an increase of 66 persons, or 28 per cent., over the attendance of the calendar year of 1875.

THE State Grange has been in session at Manhattan during the present week, and many of its members have given us the pleasure of showing them through the College. We are especially glad that, as the representatives of the farmers of the State, the Grange had sufficient interest in the matter of agricultural education to appoint a committee to examine into the aims, methods and workings of the State Agricultural College. The committee did its work with great thoroughness, spending the better part of two days in listening to recitations, obtaining information respecting the bearing of the several branches upon agricultural education, inspecting the buildings erected with the State appropriations, examining the farm, stock, nursery, shops, etc., and interviewing things generally. It was a pleasure to see that so much interest was felt in the College by these gentlemen, and every effort was made to place before them the Institution just as it is. We wish every man in Kansas would equally familiarize himself with the actual workings of this Institution.

Cost to Tax-Payers.

There is a good deal of misunderstanding in regard to the amount which the Agricultural College costs the tax-payers. Having sold a larger part of its endowment and invested the proceeds in interest-bearing securities, it is in a different position than any other of the State institutions, so far as the payment of Faculty salaries is concerned. In fact, the United States government, by means of its land grants, pays all the expenses of instruction, fuel, janitor's work, etc. By the acceptance of the endowment, the State agreed to furnish buildings and needed equipment. The last Legislature appropriated $13,300 for buildings and $2,000 for the several departments. So that this amount is the only sum which affects the tax-payers; and when this amount is distributed among all the tax-payers the proportion paid by each is so near nothing as to be hardly noticeable. What we imperatively need is buildings, and when these are supplied and equipped the Agricultural College will cease to cost the tax-payers anything.

TIME-TABLE OF THE KANSAS STATE AGRICULTURAL COLLEGE

— FOR THE —

Term Beginning Thursday, January 4th, 1877, and Closing Wednesday, May 24th, 1877.

HOURS.	PROF. WARD.	PROF. KEDZIE.	PROF. SHELTON.	PROF. GALE.	PROF. PLATT.	MRS. WARD.	MRS. KEDZIE.	MRS. CRIPPS.	SUP'T TODD.	A. A. STEWART.	W. C. STEWART.	MRS. WEREEN.
FIRST HOUR. 8:40—9:30.	F (5) Engineering. M	F (3) Analytical Chemistry. W	(4) Physical Geography. W	F (6) Butler's Analogy. W	F (1) Drill in Arith., "A." W	F (6) Mental Philosophy. W	F (2) Drawing. W	F Sewing. W	F Carpentry. M	Printing. W	Telegraphy. W	Music. W
SECOND HOUR. 9:30—10:20.	F (3) Algebra. M	F (2) Elementary Physics. W	(3) Farm Economy. W	F (3) Practical Horticulture. F	F (1) Drill in English, "A." W	F (5) Modern History. W	F (½) Drawing. W	(3) Household Economy. W	F Black-smithing. M	Printing. W	Telegraphy. W	Music. W
THIRD HOUR. 10:20—11:10.		F (4) Advanced Physics. W	(2) Practical Agriculture. F	F (3) Practical Horticulture. F	F (½) Drill in English, "B." W		F (6) Drawing. W	Sewing. W	F Wagon-making. M	Printing. W	Telegraphy. W	Music. W
FOURTH HOUR 11:10—12:00.	F (4) U. S. Con., Polit. Econ'y. W	F (5) Meteorology. W	(2) Practical Agriculture. F	F (5) Landscape Gardening. W	F (½) Drill in Arith., "B." W		(1) Drawing. W	Sewing. W	F Carpentry. M	Printing. W	Telegraphy. W	Music. W
FIFTH HOUR. 12:00—12:50.	F (4) Surveying. M				(1) U. S. History. W			Sewing. W	Scroll-sawing. W	Printing. W	Telegraphy. W	Music. W

F, Farmer's Course; M, Mechanic's; w, Woman's; (1) refers to year in Course.

Results.

The year just closing has been, in all directions, the best ever experienced by the Agricultural College. A greater number of students has been in attendance, namely, 303, being an increase of twenty-eight per cent. over the enrollment of 1875. Entire unanimity and splendid vim have characterized the Faculty, and better work has been done by the students than ever before. But one case of discipline has occurred, and the general spirit on all sides and by every body connected with the College has been admirable. The Mechanical department has cleared its expenses; the Horticultural department has more than done so in spite of the grasshoppers; and the Farm department has made $1,200 over all outlays. Six thousand acres of land have been sold; a large amount of school bonds have been bought; all of the State appropriations have been properly expended, and no one of them has been exceeded; while to cap the climax the whole Institution with its almost numberless variety of expenses has been conducted within its income. There is a great deal yet to be done, many things to be matured and perfected, but, when we compare its present condition with that of three years ago, we all feel jubilant.

The Gilpin Sulky Plow.

We make the following extract from Prof. Shelton's Report, and call the attention of farmers thereto:

Early in the season the Messrs. Deere, Mason & Co., of Kansas City, Mo., through their agent, E. B. Purcell, of this city, placed for trial upon the College farm one of their Gilpin Sulky Plows. This plow we have given a thorough trial through the entire season, which enables me to speak positively of its merits. From the day that the implement came on the farm it has been the favorite whenever its services were required, rapidly superseding the gang plow and the various walking plows heretofore in use. The advantages which may be claimed for this plow are —

First, the excellency of its work. In this respect it is greatly superior to any walking or riding plow that I have before seen. But its superiority in this regard is especially seen in corn stubble or very heavy clay lands. It turns under corn stalks more perfectly alone than did any other plow that I have seen after the stalk cutter had passed over the land. This fact alone makes it emphatically the western farmer's plow. Second, its lightness of draft. A single trial, taking for its standard the amount of earth inverted, will, I believe, convince any unprejudiced person of its superiority in this respect. Third, its strength and durability. Being made altogether of iron and steel, and its parts put together in accordance with mechanical principles, it combines strength and durability in an eminent degree. We have used this implement during the entire season without the outlay of a single cent for repairs.

THE INDUSTRIALIST.

THURSDAY, DECEMBER 14, 1876.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

Number of students enrolled this term, **182.**

Next week term examination and then vacation until January 4th.

Kenny Davidson is night operator and baggage-man at the Kansas Pacific Depot.

Adjourned meeting of the Kansas State Teachers' Association will be held in Union Hall, Topeka, December 26th, 27th, and 28th.

This issue contains an extra amount of information regarding our College work. Send copies to your friends.

Prof. Platt's concert will be given at the chapel, Tuesday evening next, the 19th inst., instead of Monday evening, as was intimated in our last issue. No admission fee. Come early.

There is to be a College social next Wednesday evening. Charades and other foolishness will be served up in the College chapel, after which all hands will repair to the sewing and music rooms to eat pop-corn and apples, and have a good time generally. Work first, play afterwards.

Beginning with this number, the INDUSTRIALIST asks the privilege of visiting several gentlemen who have not previously received it. It does so for the purpose of making a weekly report to them of the condition and progress of the Agricultural College. In no case will a bill be sent to any except those who may become subscribers.

Berlin has a church, seating 1,000 persons made of paper.—[Industrialist.

Isn't that a large number of persons to be made of paper?—[Enterprise.

Go easy, young man; go easy. That item was printed by us thusly:

Berlin has a church, seating 1,000 persons, made of paper.

The next term of the Agricultural College will begin on Thursday, January 4th, 1877, and close May 24th, 1877. New classes will be formed at the opening of the term, and students desiring a sensible education, fit for use in daily life, will find it to their advantage to be on the ground promptly. No tuition or contingent fees, and cheaper boarding than any where else in the State.

Mrs. Werden's entertainment at Peak's Hall, Thursday evening, was a success; especially so when we consider that nothing but the "Blind Girl" had been rehearsed. Had it not been for taking time from study hours, a more thorough arrangement would have been made. We doubt if a better treat could be offered in Manhattan, with present conveniences. To those who assisted, and especially to the students, Mrs. Werden tenders many thanks and well wishes. The organ used was from Mrs. Whiting's store, and added much to the enjoyment of all. We have not room to mention names of performers. All did real well.

The remains of the late Mrs. George Gale were interred in the Manhattan cemetery last Friday afternoon. The funeral sermon was preached in the Congregational church by Rev. R. D. Parker. Although the day was bitter cold, the many friends and relatives of the bereaved bridegroom were not prevented from attending the solemn funeral rites of this fair young bride whom everybody loved and respected.

This community has never before known or witnessed a death under such striking circumstances; nor has it ever attended a more solemn and heart-rending funeral service.

Mr. Gale and all the relatives of the deceased have the unbounded sympathy of the entire community; and, while they deeply mourn the loss of one so promising, they find comfort in the blessed thought that she for whom they sorrow is happy in that place where sadness and grief never enter. May the good Father so apply this shocking illustration of the uncertainty of life to the hearts of both old and young, and especially the students, that all shall prepare for an inheritance in that eternal home above. ***

The city has been filled with a fine class of strangers this week attending the State Grange meeting. They visited the College on Tuesday, and expressed themselves as perfectly satisfied with the agricultural department.—[Nationalist.

Students' Column.

EDITOR INDUSTRIALIST:—Why not have a "Societies' Hall" in this College as well as in others? The objects of Societies formed by the students may be different here than those of Yale, but yet just as laudable. Societies for the discussion of scientific subjects have been of great value, and so have those interested in agricultural subjects. Seems to us this should be the headquarters of the Agricultural and Horticultural Societies of Kansas,—the place of the annual meetings, of their principal libraries, accurate experiments and information. If the College will fit up a room for its present Societies, and assist an procuring libraries of the right kind, such an end may be reached in a very few years. W.

The following resolutions were unanimously adopted by the Alpha Beta Society, at its last session:

WHEREAS, It has pleased our Heavenly Father to remove from our Society, and from earth, Mrs. M. S. Gale, beloved wife of our fellow-member, Geo. A. Gale, therefore,

Resolved, That as a Society, and as individual members, we extend to the bereaved husband our warmest sympathy, and trust that in this dark hour he may be sustained by that Power higher than the strength of man.

Resolved, That in the death of Mrs. Gale, we, as members of the Alpha Beta Society, as students of the College, and in many cases as individuals, have lost a true friend,—one who was always ready to rejoice with those who were glad and sympathize with those in sorrow.

Resolved, That a copy of these resolutions be sent to the husband of the deceased; also be placed upon the records of our Society, and presented to the INDUSTRIALIST, Nationalist and Enterprise for publication.

THE INDUSTRIALIST.

THURSDAY, DECEMBER 14, 1876.

Department of Elementary English and Mathematics.

Report of Prof. J. E. Platt for 1876.

To the Board of Regents of the Kansas State Agricultural College:

Gentlemen:—Allow me to submit the following annual report.

My work during the past year has been with the classes in Drill in English, Drill in Arithmetic, Advanced Arithmetic, Book-Keeping, History and Constitution of the United States and Vocal Music. In the classes in Drill in English, the first month of the first term is devoted to penmanship and elementary sounds, and, while constant attention is given to orthography, the second month is devoted especially to spelling and reading. The third month to a discussion of the sentence, its elements, their arrangement and dependence, with practice in making and analyzing simple sentences. The fourth month to the expression of thought upon paper, with a criticism of the same, and declamation.

The second term is given to practice in the use of language, with a more thorough criticism of the forms of expression, the parts of speech, the relation and dependence of words, analysis of complex and compound sentences, and punctuation. Sixty-one students have received instruction in this class during the year.

The classes in Drill in Arithmetic and Advanced Arithmetic have been conducted in a manner similar to that mentioned in my report of last year. Considerable time has been spent in endeavoring to secure accuracy and increased rapidity in the use of the simple rules, and by giving examples upon real things I have endeavored to bring the study as near as possible to practical business. The class in Drill in Arithmetic has numbered sixty-seven, and in Advanced Arithmetic one hundred and twenty-three. One hundred and nine of those who have studied Advanced Arithmetic have also studied Book-Keeping. Practice in the three forms of single-entry has been given; also two or more sets of examples in double-entry.

The class in United States History is taught only in the second term of the year. I conduct the class with frequent written reviews, and it is my endeavor to so impress the chief facts of our country's history, in connection with a small number of periodic dates, upon the mind, that they will be remembered for a life-time.

I have taught vocal music in two classes as formerly, each class reciting on alternate days twice each week; and many students have made commendable progress. One hundred and three students have taken lessons in music during the past year.

My quarters in the College building have been changed during the term, very agreeably to myself, from the south centre room on the first floor, to the south-east room on the second floor. This gives more room for my large classes, more blackbord, and is in every way more agreeable.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, DECEMBER 21, 1876. No. 36.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Department of Chemistry and Physics.

Report of Prof. W. K. Kedzie for 1876.

To the Board of Regents of the Kansas State Agricultural College:

GENTLEMEN:— I hereby submit for your consideration the following report of the work and instruction of the Department of Chemistry and Physics for the year ending November 30th, 1876.

The course of instruction in this department has not been materially altered during the past year, except that the magnificent accommodations afforded by the new Laboratory building have enabled me to make it much more extended and thorough than ever before. The classes of the department have been of the usual size and excellence in scholarship; in fact, during my entire connection with this Institution there has been little or no variation in this particular. Through the first or spring term the general work of instruction embraced as usual: First, the lecture course in Organic Chemistry, with laboratory practice; second, a course in Chemical Analysis, with daily work in the qualitative laboratory; third, Meteorology, with study of weather records and drill in the construction of meteorological maps and charts; fourth, Elementary Physics, accompanied by an extended course of drill and experiments in the use of apparatus; fifth, an advanced course in Chemical Physics, with still more complete experimental work.

In the early part of this term a sudden and unfortunate illness compelled me to place my work for a short time in the hands of Mr. R. E. Kedzie, assistant chemist of the Michigan Agricultural College, by whom the course of instruction was continued.

During the present term the general instruction has comprised: First, a course in Determinative Mineralogy, with constant use of blow-pipe in the identification of minerals. Our very complete Mineral Cabinet has proved, as usual, of great assistance in the work of this class. Second, Agricultural Chemistry. In addition to the work of the class room, this class has accomplished much in the Quantitative Laboratory in the mechanical analysis of farm soils. A large series of soils has been collected, many of them from the College farm, submitted to this process of analysis after the method recommended by Prof. Johnson, and the results of each analysis published in the INDUSTRIALIST. Third, the usual course of lectures in Inorganic Chemistry, fully illustrated by experiment and accompanied by the regular course of laboratory practice in the Elementary Laboratory. Fourth, the course of lectures in Household Chemistry, which was introduced with such gratifying success last year, is now being continued as a regular feature of the chemical instruction in the Woman's Department. These lectures embrace a full consideration of the nature and constitution of food, such as bread, meats, fish, milk, butter and cheese, tea, coffee and chocolate, and of the preservation of fruits, manufacture of jellies, etc. The Kitchen Laboratory, now nearly ready for occupation, will, under the supervision of an efficient matron, add much to the practical value of this course.

In connection with the general work of instruction, I have had during the past year several advanced students for special instruction. One in quantitative analysis has been at work throughout the year; another in assaying has done some very good work in the analysis of lead and silver ores; two have been at work at pharmacy, manufacturing a large series of druggists' preparations; and still another has displayed much taste and skill at work in photography, for which the department has a very full and complete outfit of apparatus. In addition to these duties of instruction and laboratory supervision, the general outside analytical work of the department has been more extended than during any year since my connection with it. Two important cases of poison analysis have been received. One forwarded by Gov. Salter from Neosho county is a suspected case of murder by poisoning. A minute analysis of the stomach proved, however, the entire absence of all poison, and that death must have taken place from natural causes. The other case was from Osborne county, requiring my presence there for some two weeks in attendance upon the trial of Henrietta Cook for the murder of her husband. The analysis of the stomach revealed the presence of forty-one hundredths of a grain of strychnine, and the woman is now serving out a sentence of imprisonment for life at Leavenworth.

Considerable work has been done in the analysis of mineral waters, particularly a very minute analysis of the somewhat notable Iola mineral well, the result of which will shortly appear in a separate pamphlet; and an analysis not yet complete of the great spirit spring of Mitchell county, which is celebrated in Indian mythology. A large number of analyses for private parties have also been completed, including specimens of Kansas manufactured salt, of druggists' compounds, and ores of lead, zinc, silver, gold, etc.

The series of meteorological observations, under the directions of the Signal Service Bureau, have been continued during the year. The records have now been in progress for upwards of sixteen years, and are each year becoming of greater importance. I have also been assisted at different points throughout the State by a number of volunteer observers, members of the Kansas Academy of Science, who have been aiding me in determining the quantity of ozone daily present in Kansas atmosphere. These results are now being tabulated and compared with those of Eastern observers, and promise to prove of great interest.

Of the Laboratory building, which has been occupied by the department since the early part of the present term, it need hardly be said that it has more than realized the expectations which have peen entertained for it. The water system proves perfect. The sky-light ventilators mantain the air of the working laboratory as fresh as a home parlor. The system of sky-light ventilators in the large Physical Laboratory gives not only admirable perpendicular light for the handling of apparatus, but, when partitioned off by white screens, gives an apartment for photographic purposes which can be equalled by few galleries in the State.

Any teacher who has attempted to handle large classes in experimental study in cramped, insufficient, and ill-ventilated quarters, can appreciate the blessing of large, well-lighted, and well-ventilated rooms, where the classes engaged in different departments of experimental work can pass in and out without interfering with, or intruding upon, each other. The wood-cut and description of the building, published in the INDUSTRIALIST of Oct. 12th, together with the photograph recently taken, have been forwarded throughout the United States, and from many eminent chemists I have received letters expressing much surprise that a building of such size, and so perfect and complete in its arrangements, could have been constructed by so moderate an expenditure of money.

But in order to at all realize the advantages which may follow from the possession of such a Laboratory building, it becomes very important that it should be so equipped as to enable the department to carry out in full the work which it now finds itself ready to undertake. To this end I submit to you specifications and estimates of the furnishing and apparatus which will place the department in position to undertake any and all work which it may be called upon to perform.

The public school is the seed of the future.

The Kansas Legislature meets the second week in January.

A farmer near Burlingame sold $3,000 worth of fruit this year.

An old bachelor says that when he wooed she wouldn't, and that was the cause of it.

A Doniphan county man sold 4,000 gallons of wine, made from his vineyard this year.

Papers are continually publishing hotel arrivals, as if the arrival of a hotel was an every-day occurrence.

A citizen of Labette county sold ninety-one hogs, seventy-seven of them last spring's pigs, for the round sum of $1,100 cash.

A steer recently shipped to Leavenworth tipped the scales at 2,300 pounds, and broke the gang plank over which it passed.

THE INDUSTRIALIST.

THURSDAY, DECEMBER 21, 1876.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Experiments on the College Farm During 1876.

A series of systematic experiments has been commenced the past season for the purpose of ascertaining (1) the relative values for this latitude of a considerable variety of cereals and potatoes; and (2) the value of different fertilizers applied to wheat and corn, and different methods of cultivating corn. The grains experimented with were Wicks and Clawson wheats, White Winter rye, Probstier and Chevalier barleys, and Houghton, Waterloo, White, Somerset and Australian oats. In the experiment with potatoes two hundred and forty varieties were employed, including nearly all the noted eastern sorts.

Of the grains I am unable to give returns in weight and measure, for the reason that nearly all the sorts were more or less injured in quality or quantity from exposure to the rains of summer. Of the wheats the Clawson was entirely ruined by the rust, while the Wicks gave a very light yield of inferior grain. The White Winter rye proved quite satisfactory, giving a large yield of superior grain. Of the oats only the Australian variety made a successful growth, the grain of this sort being plump and well filled, and the yield large. The foreign varieties of barley made such a feeble growth as to amount practically to failure.

It is interesting to note of our experiments with potatoes that the varieties which gave best results are generally little known or neglected sorts in the East. This will be readily seen by an inspection of the following brief list of sorts giving the largest yields: Unknown, Kansas, Chenery, Red Jacket, Carpenter's Seedling, Extra Early White, Great Britain, and Ohio Beauty.

In addition to the above-mentioned sorts, a large variety of grass seeds, which must be considered as experimental in this climate, have been seeded upon the College farm. Among these may be mentioned alfalfa or lucerne, seeded to the amount of six acres; mixed grass seeds, chiefly timothy, orchard grass and Kentucky blue-grass, two acres. All these germinated and made a very satisfactory growth, the alfalfa, timothy and orchard grass being the most promising. Of the value of these grasses for Kansas I can only speak after a more extended experience. However, the grasses seeded in previous years have generally given good results; thus, two acres of alfalfa seeded in the spring of 1875 gave this season a yield at one cutting of two and thirty-eight hundredths tons per acre, and a second crop nearly equal to the first was cut down by the grasshoppers later in the season. Timothy and blue-grass seeded in 1873 and '75 have been an almost perfect success with us, that seeded in 1873 making an excellent sod, and that of 1875 nearly reaching the same condition.

EXPERIMENTS WITH FERTILIZERS.—Late in the fall of 1875 two sets of experimental plats were laid off in field No. 16, for the purpose of testing the efficacy of well rotted farm-yard manure and gypsum or plaster applied as a top-dressing to wheat. All told sixteen experimental plats were employed, each plat being one rod in width by ten rods in length, the plats being separated by spaces two feet in width, which received no special treatment. The general plan of the experiment was to begin each series with a plat to which manure was applied; to the next plat in order nothing was applied, and to the next plaster; thus, nothing plats separated the manured and plastered plats through the entire experiment. The object of the nothing plats was to furnish a standard with which to compare the plats receiving special treatment. The manure was applied Feb. 21st, at the rate of twenty-eight loads per acre; the plaster, an excellent variety manufactured at Blue Rapids, Kas., was applied April 24th, at the rate of one hundred and sixty pounds per acre. In all the operations of manuring, plastering, harvesting, threshing, etc., care was taken to give every plat precisely the same treatment at as nearly as possible the same time. The following table shows the yield per acre of grain and straw of the manured, plastered and nothing plats:

PLATS.	Bush. Grain.	Lbs. Straw.
Manured plats	17.4	3,716
Nothing plats, adjacent manured	18.6	3,645
Plastered plats	18.5	3,587
Nothing plats, adjacent plastered	18.7	3,636

It will be seen from this table that the manured plats gave a slightly diminished yield of grain, with an increase of straw, as compared with the nothing or plastered plats. This may be explained without difficulty. From the day that the manure was applied its effect could be seen in the increased luxuriance of the plats thus treated. But later the manure had the effect of retarding the ripening of the grain, thus furnishing conditions favorable to the spread of the rust and to the action of chinch-bugs. At least two of the manured plats were considerably injured by both rust and chinch-bugs. The plaster had not the slightest apparent influence either upon the growing plants or the quality of the grain.

Early in the season four experimental plats, each 2x4 rods, were laid off in the alfalfa field south of the Mechanical building, for the purpose of testing the application of plaster to alfalfa. To every alternate plat eight pounds of plaster were applied, being at the rate of one hundred and sixty pounds per acre. The plaster was applied April 27th, and the alfalfa cut just one month from that date. The weighing of May 31st showed for the nothing plats a yield of 4,410 pounds per acre of well cured hay, and for the plastered plats 4,776 pounds per acre, showing for the application of plaster an increased yield of 326 pounds of hay per acre. A marked difference in the plats could be seen before cutting, the plastered plats showing a darker color and more luxuriant growth than the unplastered.

Finally, plaster was tried upon corn in hills, one table-spoonful being applied to each hill after the corn had been up one month. Six plats, extending across the field, were employed in this experiment, four of the plats containing four rows of hills each, and the remaining two plats three rows each, nothing plats alternating with plastered as before. The yield per acre of the plastered plats was 63.1 bushels, of the nothing plats 59.4 bushels.

EXPERIMENTS IN PLANTING.—An experiment has been in progress during the year having for its object to ascertain the relative values of the two methods of planting corn, —in hills and in drills. Four plats were laid off across a portion of the field very uniform as to the character of its soil. Each plat contained four rows of corn, the rows being three and a half feet apart. In the first plat the corn was planted in drills, in the second in hills after the common fashion; again, the third was planted in drills and the fourth in hills. When the corn was about six inches high the drilled plats were thinned out, leaving the stalks as nearly as possible ten inches apart in the rows; the plats in hills were likewise thinned out, leaving the same number of stalks in every plat throughout the experiment. In cultivating the plats care was taken to give each the same treatment, and beyond thinning, hoeing once, and cultivating twice, no special treatment was given the plats. The corn was husked November 11th, and the weighings showed for the drilled plats a yield of 71 bushels per acre, for the plats in hills 62½ bushels per acre, an advantage in favor of the method of planting in drills of 8½ bushels per acre. By the "bushel" of corn mentioned in these experiments is to be understood in every case seventy-two pounds of ears.

We may sum up the results of these experiments in the following brief statements:

1. For the application of manure as a top-dressing to wheat, for the present season, no increased yield of grain, and only a slightly increased yield of straw is shown.
2. For the application of plaster to wheat no increase either of grain or straw is shown, and for the use of plaster on corn only a very slightly increased yield of grain.
3. The application of plaster to alfalfa increased the yield of hay 326 pounds per acre.
4. The method of planting corn in drills gave an increased yield of 8½ bushels per acre as compared with the old method of planting in hills.— [Prof. Shelton.

THE INDUSTRIALIST.

THURSDAY, DECEMBER 21, 1876.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

The next term of the Agricultural College will open THURSDAY, JANUARY 4th, 1877.

The prospects for next term are very fine.

Number of students enrolled this term, **182.**

Prof. Lee is looked for this week. He comes back to Manhattan to stay, as all will be glad to learn, having been called as rector of St. Paul's church.

Johnny Griffing has gone to Topeka to inquire into the condition of a certain farm in that vicinity. "Coming events cast their shadows before."

The ice on the Blue river is five inches thick in some places, and, according to the testimony of certain students who sat down on it suddenly, is "solid clear through."

It is rumored that our Superintendent of Telegraphy will have an assistant next term, and that the choice will be made Christmas night. We don't believe it, but this is a curious and "mighty onsartin" world.

The thanks of the students are due to Mrs. Werden and Mrs. Cripps, and to Messrs. S. M. Ward and W. P. Burnham, for their labors in originating and so successfully carrying out the idea of having a social at the end of the term.

The term is closed. Some of the students have gone home, others are remaining, all are anticipating a pleasant time during vacation; and from the very bottom of our heart we wish them a Merry Christmas and a Happy New-Year.

Elsewhere will be found a notice of the concert Tuesday night by the singing classes. We wish to congratulate Prof. Platt on his success in drilling the performers so well, and the performers on giving so good a concert. It was admirable, and a fitting benediction to a happy term.

Beginning with this number, the INDUSTRIALIST asks the privilege of visiting several gentlemen who have not previously received it. It does so for the purpose of making a weekly report to them of the condition and progress of the Agricultural College. In no case will a bill be sent to any except those who may become subscribers.

The time-table for next term is arranged and the studies have already been assigned to the great majority of the students. As a result, the lessons will be announced on Thursday, the opening day of the next term, and recitations will begin on Friday. The examination of new students will not interfere with recitations. All should be on the ground promptly.

The next term of the Agricultural College will begin on Thursday, January 4th, 1877, and close May 24th, 1877. New classes will be formed at the opening of the term, and students desiring a sensible education, fit for use in daily life, will find it to their advantage to be on the ground promptly. No tuition or contingent fees, and cheaper boarding than any where else in the State.

The social Wednesday evening was just the liveliest thing we have attended lately. The hard work of the past term had amply prepared the students for the enjoyment of this the only gathering since the College year opened. The charades turned up minus, but the "other foolishness," consisting of apples, candy and pop-corn, were present in exceeding abundance, as janitor Davis testified the next morning after interviewing the rooms a few hours. The fact that every one went around with smiling face and noisy tongue points to the conclusion that all hugely enjoyed themselves.

After the company had sufficiently "refreshed" it was moved, seconded and "unanimitously" carried to adjourn to the Telegraph Hall, where they proceeded to weary themselves by marching in double file to the tunes of "John Brown" and "Star Spangled Banner." At half-past ten some one suggested that it was time to go home, and after singing as a doxology the very inappropriate piece, "We Won't Go Home Till Morning," the party dispersed, full of good humor and well pleased with the closing scenes of a happy, profitable and busy term of College labor. May we live to report many more such pleasant gatherings at the close of coming terms, when, satisfied with their labors, the students meet and mingle together with such happy results.

Through the kindness of Mr. Irving Todd, editor of the News, we are permitted to use, in advance of his publication day, the following locals and reports:

Our devil remarks that for downright fun let him go to a College social and throw pop-corn and apple parings on the floor.

Last week the State Grange met in Manhattan, and many of its members made a visit to the College. A committee was appointed to thoroughly inspect the workings of the Institution.

On Monday and Tuesday last the final examination of the term was held. On Monday the first hour classes were examined from 8:40 to 10:20; the second hour classes from 10:20 to 12. On Tuesday the third and fourth hour classes were similarly dealt with, and the remaining classes were interviewed in the afternoon.

The Websters held a lively meeting last Saturday evening. This was the last meeting of the term, and there was considerable business to be done in the way of closing up affairs. A good attendance and all interested caused things to pass off well.

The question, "Resolved, That the works of man are more beautiful than the works of nature," was, after a spirited debate, decided negatively. The members appointed for other duties were all present and prepared.

The question chosen for the first meeting next term is "Resolved, That our nation's shame is greater than her honor."

The telegraph room was nearly filled with members of the Alpha Beta Society and anxious visitors on Friday afternoon, Dec. 15th. No doubt the unusual attendance was due to the all-absorbing question, "Should the present system of insurance be encouraged?" which the A. B.'s had up for discussion. It is well known that the question of insurance is a deep one, and one of vital importance; and from the spirited debate which took place, it is evident that the speakers knew just how to handle it.

The report of the committee on finance was received, and the Society were informed that the sum of forty-two dollars was at their disposal. They propose to invest this in the most valuable books that can be had, as the commencement of a library.

Near the close of this meeting, probably because it was the last session of the term, some one moved to fine certain individuals for neglect of duty. This occasioned great excitement. Law and parliamentary rules were expounded in a manner that would have made Prof. Parsons ashamed of himself.

Under criticisms, S. M. Ward delivered himself of a critical medley which was remarkable for its taste, propriety, genius and value. D. A. Z.

Prof. Platt gave an entertainment Tuesday evening, in the chapel, which was praiseworthy. It consisted of very fine music, prepared by the Professor and his advanced music class. Twenty singers constituted the choir, and they all acquitted themselves creditably. A large audience was present and they were well entertained.

The music consisted of choice selections, of which the following were particularly noticeable: "Spirit of Song," the opening piece; "How Lovely is Zion;" "In Our Boat We Glide;" "When You and I Were Boys;" "A Matrimonial Difficulty;" and the serenade, "Sleep On." The "Matrimonial Difficulty" caused much applause, and was called out the second time.

Nearly all the students and a large number of people from town and vicinity were present, and they all pronounce it one of the rarest treats of the season. D. A.

THE INDUSTRIALIST.

THURSDAY, DECEMBER 21, 1876.

[Advertisement.]

The Commonwealth.

Prospectus for 1877.

One year ago the Commonwealth issued a declaration of its principles and purposes. This declaration embodied briefly the expression of a determination to stand by the Republican party; of a belief in "honest money" as distinguishable from an irredeemable paper currency, and of a general conviction that the first duty of a newspaper is to tell the news, and of a Kansas newspaper to give Kansas news the precedence.

A year has passed and has shown that the Republican party is, more than ever, necessary for the preservation of liberty and law in this country. In regard to the financial question this much, if no more, has been decided at the polls, that the people are opposed to wild theories of the inflationists.

The course of the Commonwealth, as a political and news journal, has been abundantly sustained. An enlargement of the daily has been found necessary, and the circulation of the paper has steadily increased. In view of these circumstances the Commonwealth has no new policy to announce, but will adhere to the course marked out in the past.

Kansas news will continue to be a specialty, and the three departments of "State Items," "Kansas Farming," and "Kansas Churches," will be diligently collated from our State exchanges, while by free use of the telegraph and special correspondence every event of general interest which transpires in the State will be laid before our readers.

In the files of the Commonwealth may be found a history of the State government in every department, executive, legislative and judicial. The syllabi of decisions of the Supreme Court are published in the Commonwealth by authority. The legislative reports will, during the coming session, be made, as heretofore, full and complete. The "Legislative Summary," which was generally commended and freely used by the press of the State last winter, will be made a regular feature.

In submitting this brief statement, it is desired that it be distinctly understood that the Commonwealth sets up no claims to be the "leading State paper," nor assumes to be the "organ" of any man or set of men save the editors and proprietors. It bases its claims for support on its merits alone, and the attention of people who wish a Republican paper published at the State Capital is respectfully solicited.

Especial attention is directed to the weekly Commonwealth, a forty-column paper, with few advertisements, and containing all the reading matter that appears in six issues of the daily.

TERMS:—Weekly, three months, 50 cents; six months, $1.00; one year, $2.00. It is always stopped when the time for which it is paid expires. Daily, $10 per year.

Specimen copies sent free on application.

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The Annals of Kansas, by Daniel W. Wilder Published by Geo. W. Martin, Kansas Publishing House, Topeka. Price $5.

Telegraphy.—Four miles of line, twenty five line instruments, and daily instruction and drill by an experienced operator.

Kansas Publishing House.—Standard Stock, Standard Work, Standard Prices, to be had at the Bindery and Blank Book Manufactory of George W. Martin, Topeka, Kansas. Orders from counties and townships solicited. All sorts of books made, bound and rebound. Legal Blanks, Seals, Stationery and Job Printing.

Printing!—Daily instruction and drill in the work of a First-Class Printer. The Literary Departments offer a thorough education in the construction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping; and in Industrial Drawing, as the best developer of that taste necessarily exercised by every good Job Printer. The Printing Department is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer. Besides regular class instruction in printing, the weekly publication of the INDUSTRIALIST by the Department furnishes advanced students the requisite drill in newspaper work.

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KANSAS STATE AGRICULTURAL COLLEGE.

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Manhattan, Kansas.

FACULTY.

JNO. A. ANDERSON, Pres., Prof. Polit'l Economy.
M. L. WARD, Prof. Mathematics and English.
WM. K. KEDZIE, Prof. Chemistry and Physics.
E. M. SHELTON, Prof. Prac. Agricul., Sup't Farm.
E. GALE, Prof. Botany and Horticulture.
J. E. PLATT, Prof. Elem'y English, Mathematics.
C. V. RILEY, Lecturer on Entomology.
D. J. BREWER, Lecturer on Practical Law.
A. TODD, Sup't Mechanical Department.
A. A. STEWART, Sup't Printing Department.
W. C. STEWART, Sup't Telegraph Department.
MRS. M. E. CRIPPS, Sup't Sewing Department.
MRS. M. L. WARD, Teacher of German and French.
MRS. E. M. KEDZIE, Teacher Industrial Drawing.
MRS. H. V. WERDEN, Teacher of Inst'm'nl Music.
GEORGE H. FAILYER, Assistant in Chemistry.

THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial Pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; in Book-Keeping and Practical Law. Words, numbers and lines are the tools used by all industrialists in conveying or preserving ideas; and our endeavor is to make the student a ready workman in the art of using these tools for practical purposes, rather than to make him a critic of fancy English or a professor of abstract Mathematics.

FARMER'S COURSE.

Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the Structure, Growth, and Value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, in the Wood and Iron Shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

MECHANIC'S COURSE.

To Mechanics, in addition to the studies of the Farmer's Course, applied Mathematics and Industrial Drawing are more extensively taught. Besides this literary education, the student is taught daily in the particular workshop of his trade. Special advantages are thus offered to those who wish an education as a Carpenter, Cabinet-maker, Wagon-maker, Blacksmith, Turner, Carver, Engraver, or Printer. No charge made for the use of tools or material for class practice.

WOMAN'S COURSE.

The course of study for woman is more practical, and, therefore, more sensible than that found in any other institution in the United States. The studies are shaped with reference to the liberal and direct education of woman as a woman instead of as a man, and as an industrialist instead of a butterfly. Among the special features of the course are Physiology and Special Hygiene, Household Economy, Farm Economy, Gardening, Household Chemistry, etc.

The workshops include those of the Milliner and Dress-maker, Printing, Telegraph, Scroll-Sawing, Carving, Engraving and Industrial Music.

Superior advantages are offered to students of higher Chemistry, to Mineralogists, Druggists, Operators, and Workers in metals.

Full collections of the Plants, Insects and Birds of Kansas, are being made as rapidly as possible.

☞ TUITION ABSOLUTELY FREE! ☜

No contingent fees, except for use of pianos and organs in the Musical Department; and a charge of $1.00 per month for material and instruments used by male students in Printing and Telegraph Departments. Boarding ranges from $2.75 to $4.00 per week.

CALENDAR:—Fall Term closes Thursday, Dec. 21st, 1876; Winter Term begins Thursday, Jan. 4th.

For further information, apply to
J. A. ANDERSON, President.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, DECEMBER 28, 1876. No. 37.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Department of Botany and Horticulture.

Report of Prof. E. Gale for 1876.

To the Board of Regents of the Kansas State Agricultural College:

GENTLEMEN: — The primary work of the Department of Horticulture, outside of the lecture room, has been to recover as far as possible the losses of 1875. Though it has been necessary to limit the work of restoration within that measure which could be met by the actual receipts of the department, much more has been accomplished than was anticipated at the beginning of the year. This plan has not permitted the doing of many things which have seemed desirable, and in some cases has involved the doing of much necessary work in a hasty manner. The result, notwithstanding the depressed condition in which you found this department last year, gives us a considerable increase in the amount and value of our stock and material on hand, and nearly an even balance sheet as to receipts and expenditures. This course, adopted at first as a necessity, if persisted in for a few years, would probably develop this department sufficiently to answer the demands of the Institution, but it cannot be done immediately without greater expenditure of means than will accrue from this source. It is to be regretted that this policy does not afford the means for a carefully conducted series of experiments in the various departments of horticulture, which is so much needed. The ordinary farmer cannot afford to try experiments; neither can the man who depends upon the cash returns of the nursery, the orchard, and the garden. Hence, we believe it will promote the interests of the College and the State to secure a small annual appropriation to be used exclusively for the purpose of experiments connected with this department. I urge this upon the attention of the Board from the conviction that, while there are many questions of great interest to the student and of vast pecuniary moment to the horticulturist, there is probably no other way in which we can at so little cost promote the interests of the entire State. The growth of the past season has been exceedingly vigorous. Trees and shrubs have generally ripened up and gone into winter quarters in good condition. Several hundred trees have been planted about the College buildings and it is proposed to continue this plantation the coming year.

Since our last report Botany has been added to the chair of Practical Horticulture. This transfer has demanded material changes in the previous course of Practical Horticulture involving a large amount of extra labor. Our purpose is to teach botany from the practical side as introductory to the work of the orchard, garden and farm. In doing this we see no better way than to work, without reference to the time and expense involved, a practical course in Botany suited to the aims of the Institution and the wants of the class of students who seek instruction here. In connection with this subject, I respectfully call your attention to the necessity of a considerable addition to the library of botanical and horticultural works. Some such works are indispensable to the successful development of this department. In addition to this, at the earliest possible day, provision should be made for an ample conservatory and propagating house, with ample work room and cellars for storage of roots, vegetables and fruits, in connection with a commodious horticultural hall and lecture room with which we are now provided. If we can now secure a conservatory and propagating house, just sufficient to answer the wants of the lecture room, our facilities for practical instruction will be greatly improved.

This department acknowledges the donation of a fine lot of green-house plants from E. Snyder, Esq., Highland, Kansas.

Proceeds of Department, as shown by receipts of Treasurer	$560 31
Hay and Corn	68 00
Total	$628 31
Expenditure of Department, as shown by triplicate bills in this office	$604 36
Value of nursery stock, Nov. 30th, 1876	4807 08
Value of nursery stock as reported Nov. 30th, 1875	3408 80
Enhanced value of nursery stock	1398 28

To estimate correctly the profits of the horticultural department, we should also take into account the greatly increased value of the ground devoted to forest, apple and pear orchards, and vineyard. These, though not easily estimated, must be regarded as no inconsiderable sum.

Department of German and French.

Report of Mrs. Ward for 1876.

To the Board of Regents of the Kansas State Agricultural College:

GENTLEMEN: — Two classes in German were taught during the term ending in May, and one during this fall term. The advanced class progressed sufficiently to acquire considerable skill in translating German into English at sight, and to be able to render Schiller's Wm. Tell, about half of which was read in class, and portions of which were translated for examination. The constant practice of speaking and writing in the language was daily kept up. The beginning class of twenty made good progress, having gone over Worman's method of irregular verbs, and having made translations of the selections. The class this term has been small, but has made excellent progress and done very faithful and satisfactory work.

The French class which began in January were prepared at the close of the term in May to read with profit, and had already begun L'Allemayne, which they read with Otto's Conversation Grammar. The advancement was, for the most part, exceptionally good.

The rhetoric class placed in my hands for this term, of thirty-four students, was divided in two divisions, and recited at different hours. This branch has been treated both as a science and an art, definitions of terms being given, and examples of figures, metaphors and tropes being furnished as they occur. Words, their history and derivation, have been studied. Practice in paraphrasing and condensing and sentence-making, with views of the languages out of which English has grown, has been given, beside the weekly writing of essays, reviews and abridgments. While Hart's Rhetoric has been used as the text-book, the classes have had presented to them hints and methods gained from Harver, Whitney, Marsh, and other sources, which, it was thought, could facilitate the acquisition of an enlarged vocabulary and give skill in its use.

Department of Drawing.

Report of Mrs. Kedzie for 1876.

To the Board of Regents of the Kansas State Agricultural College:

GENTLEMEN: — Allow me to submit the following report of the work and instruction in the Department of Drawing during the time it has been under my supervision, from August 24th to November 30th, 1876.

Three classes have been taught, numbering in all sixty-nine students. The course of instruction adopted has been that of Prof. Walter Smith. The larger part of the classes were beginners, who commenced with the first book in Free-Hand. Alternating the books of Free-Hand with those of Geometrical Drawing, four books have been nearly completed, besides their usual black-board exercises.

Many members of the classes have made marked advancement in designing, and all have improved much in their ideas of form and outline in Free-Hand, and in exact mathematical measurements in Geometrical Drawing. All members of the classes have constructed drawings, outside of their text-books, which are now on exhibition in the drawing room. The appearance of the room has been much improved by the addition of our collection of drawing charts, plaster charts and models.

Saline county has a single wheat field of 4,000 acres.

Lincoln county planted 25,000 forest trees, most of which are doing well.

The Indian Territory contains 71,200 Indians, consisting of over forty different tribes.

Braiding straw is a new industry adopted by the authorities for the inmates of the Blind Asylum.

The total wheat crop of the country is believed by the Agricultural Bureau to be 245,000,000 bushels.

THE INDUSTRIALIST.

THURSDAY, DECEMBER 28, 1876.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Thermometers.

The cold wave of the winter is upon us; the thermometer each night tumbles more or less below the zero point; and amateur meteorologists are as usual waxing warm over the peculiar merits of their several and individual thermometers. This last induces us to devote a few words to the consideration of thermometers in general, and to the causes of their discrepancies and uncertainties in particular.

To attempt to impeach or cast discredit upon a man's thermometer is likely to prove a most ungrateful effort; because, like his personal honesty, his family cook-stove, and his household dog, it is held from the very nature of the case to be entirely above suspicion or reproach. And yet despite this popular prejudice or reproach we must, at the risk of incurring severe displeasure, express our unqualified belief that the average cheap thermometer, as an accurate indicator of temperature, is little else than useless. Our readers know how common it is to find two thermometers, from the same manufacturers, hanging side by side and yet differing in their reading three or even four degrees. Now, this must necessarily be the condition of things when we consider the prices at which these instruments are placed upon the market.

To expect to obtain a good, well filled and mounted and accurately graduated thermometer for one or even two dollars is preposterous, when we consider the expensive processes and costly skilled labor necessary to produce a first-class instrument. Let us look at them: First, the tube is to be blown from first quality glass, and with a bore as absolutely perfect as human skill can make it; but even with the greatest care it is found, upon testing the tube with a little column of mercury passed up and down it, that inequalities exist and three out of every four tubes must be rejected as unfit for the purpose. Then the bulb and tube must be filled by expelling all air by heat and plunging the open end under mercury. Then the last traces of air must be expelled by boiling the mercury, and while the space above the column is completely filled with the vapor of mercury, the tube must be hermetically sealed. After determining the two fundamental points — 32° as the melting point of ice and 212° as the boiling point of water — with proper corrections for elevation and barometric pressure, the thermometer must be placed upon the dividing engine. Here a little column of mercury, say ten degrees in length, must be moved backward and forward through every part of the tube, extremes marked and the included space divided into ten equal parts; so that in every superior thermometer the spaces between the degrees are not absolutely of the same length, because at its base the bore must vary, however infinitesimally, and the intervals between the degrees must lengthen or shorten accordingly, to represent the same absolute amount of expansion. Finally, the degrees must be etched upon the thermometer tube itself. The instrument should be enclosed or supported by no frame whatever, either of wood or metal, but should be held by a semicircular metallic wire spring at least six inches from the object to which the spring is attached.

Of course all these operations and precautions are expensive, and we can hence understand the temptations to which the manufacturer of cheap thermometers only too frequently succumbs. First, his tubes are of cheap glass and cheaply blown; the bore is irregular and the glass upon the bulb is too heavy; he rejects few tubes, and these only of the very worst. Then the air is not completely expelled, and they are clumsily sealed. In graduating the stem he takes it for granted that his tube is uniform and roughly divides the spaces alike into degrees, which of course cannot have an equal value. Then he marks these degrees, not upon the thermometer stem, but upon a metal or paper scale against which it is placed. This scale is not only very liable to become shifted out of position, but if metal it expands and contracts with changes in temperature, and if paper it undergoes a constant alteration in position from the absorption of more or less atmospheric moisture. Finally, the cheap thermometer is supported in a bulky case, frequently of blackened metal, which from its great power of conduction and radiation very properly caps the whole list of inaccuracies. All these circumstances conduce to make the cheap thermometers indicate colder weather in winter and hotter in summer than the more expensive instruments which are more accurately and carefully costructed.

But not less important than a good thermometer is a good place in which to hang it. This should if possible be entirely away from any building, freely exposed to the air, but protected from the direct rays of the sun. We frequently hear the difference in thermometers explained by the fact that one "hangs in the wind." This is of course absurd, because, other things being equal, the wind is absolutely no colder than still air. The real difficulty is that during the night buildings and all other heated objects radiate heat with wonderful rapidity, so that a thermometer hung in an alcove of a building is in great danger of being surrounded by a stratum of relatively warm air, and its readings will prove uncertain as a consequence. In fact, in the whole realm of climatology, there is probably nothing more difficult than an accurate measurement of the delicate fluctuations of atmospheric temperature; and yet upon such accuracy, more than upon all else, must be based any definite knowledge of meteorological forces and of the laws which govern them.— [Prof. Kedzie.

Good for Kansas.

We spoke the other day of the manner in which the awards of the Centennial Commission were "graded," by the language of the diploma. A better illustration of the superiority of the American over the European system cannot be found than is furnished by the wording of the following diploma granted to Geo. W. Martin:

U. S. CENTENNIAL COMMISSION,
Philadelphia, 1876.

Report of Award.] [Group 13.

Product: Book-binding, specimen of Ruling and Binding.

Name and address of exhibitor: Geo. W. Martin, Topeka, Kansas.

The undersigned, having examined the product herein described, respectfully recommends the same to the United States Centennial Commission for Award, for the following reasons, viz.:

A seven-quire medium book, prepared for show. The cut is tastefully printed, and binding and ruling faultless.

Signature of the Judge,
GUSTAV SEITZ.

Approval of Group Judges,
JAMES WILCOX, H. T. BRIAN,
EDWARD CONLEY, C. O. CHAPIN.

No higher award can be given than that. Work that is "faultless" is perfect, and we are quite certain that such an award is far more satisfactory to all concerned than would have been the "first premium," which, under the European system, the Committee would have issued in this case.

System in Farm Labor.

The following pair of pertinent paragraphs, which we find in the New England Homestead, must have been written by some level-headed body who keeps his eyes wide open, and knows how to tell what he sees and thinks:

The amount of muscle that can be saved by a little brain labor is wonderful. And yet the science of doing everything in proper season and place, in fact properly, is something that agricultural papers, or farming books, cannot teach. Experience, calculation and forethought are the mentors. A month before a piece of machinery is to be used a glance at it will show where it is defective. A rainy day, a spare hour, a chance to take it to town to be repaired without going on purpose. These present themselves to the intelligent farmer and when the harvest is ripe, or the corn ready for the cultivator, there will be no delay for the mending of damaged machinery.

There is no such weak laziness, or wicked waste of time and opportunity, as the man who never has time to do anything properly. He goes to town with three errands and comes home with only one finished, he has no time for the others. He plows for fifty acres of corn, but has no time to get in but forty. He plows with a dull plow, and chops with a duller ax, for lack of time to sharpen them. All these are lack of forethought and system — a neglect to use the brain that God has given him to shape and direct his work and save the muscle. An ox will do the work, but he cannot plan it. The horse is powerful, but he is controlled by his master, and his power utilized. Man's labor is but brute strength, and the more brain power that is brought to bear upon it, the more surely every stroke tells, and more grand will be the result.

THE INDUSTRIALIST.

THURSDAY, DECEMBER 28, 1876.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

The next term of the Agricultural College will open THURSDAY, JANUARY 4th, 1877.

The New-Year's edition of the Commonwealth is a huge affair and crowded with interesting matter.

The room occupied by the Drawing department has been enlarged, on acconnt of the size of the classes, and will be a surprise to the old students.

E. L. Thorpe, of Baldwin City, is spending vacation with relatives in Salina and Manhattan. He will probably give a reading in Manhattan next week.

This week we have been enjoying such luxuries as snow and ice, followed by sleigh rides and skates, with the thermometer from six to twelve degrees below zero.

On Thursday morning, January 4th, the next term begins; the first bell will ring at 8:30 A. M., and the second at 9 A. M. The enrollment will be made in the usual way, and the lessons assigned for Friday, when recitations will begin. New students will be examined and assigned on Thursday.

A number of our students did not go home to spend the holidays; and while many are taking their recreation on skates and at various sports, others are recreating on the farm, at the carpenter's bench, the printer's case, the telegraph key, and the scroll-saw. No institution in the land can show a more practical and every-day class of students than ours,—hardy, jolly, busy and brainy.

Through the kindness of Prof. Platt we have been permitted to inspect some of the work done by his Book-Keeping class the past term, and we do not hesitate to say that for the time spent upon this branch the students show great proficiency. The books we examined were made up from an original and practical memoranda, submitted to the class as a final test of their knowledge of book-keeping, and we found their work neat and accurate and in every respect worthy of praise.

Among the books which we noticed as possessing the above good qualities were those of Messrs. W. S. Fraunberg, John Winne, R. A. DeForest, and Miss Carrie King, and others whose names we cannot recall. We congratulate the Professor and his class upon the success which has attended their labors in this direction, and trust that their cash account may always have a heavy balance on the debit side.

Students' Column.

Some one has thus pictured the feelings of A. A. S., the only unmarried man now in the Faculty:

"I feel like one who treads alone
Some banquet hall deserted;
The lights all fled, the garlands dead,
And all but me departed."

Another year has past. As we look around us we miss many of the familiar faces of a year ago. Some have entered that higher and larger school, the world; some have removed to other institutions and States; and still others have gone to that place where study, privations, anxieties and other troubles are not known, and where sweet peace will follow them throughout eternity.

As students we have much for which to be thankful, and as we enter upon the new year let us realize how great are our privileges, look back over the scenes of the old year with its misspent time, and wisely conclude that our future shall be employed in the cultivation of our talents, and in thorough preparation for life's work. And if ere another new year dawns any of us shall have been called away from earth, we trust that the parting hour may find us ready and willing to cross the river and enter upon the enjoyment of that "better part."

TIME-TABLE OF THE KANSAS STATE AGRICULTURAL COLLEGE

— FOR THE —

Term Beginning Thursday, January 4th, 1877, and Closing Wednesday, May 24th, 1877.

HOURS.	PROF. WARD.	PROF. KEDZIE.	PROF. SHELTON.	PROF. GALE.	PROF. PLATT.	MRS. WARD.	MRS. KEDZIE.	MRS. CRIPPS.	SUP'T TODD.	A. A. STEWART.	W. C. STEWART.	MRS. WERDEN.
FIRST HOUR. 8:40—9:30.	(5) M Engineering.	F (3) M Analytical Chemistry.	(4) W Physical Geography.	F (6) W Butler's Analogy.	F (1) W Drill in Arith., "A."	F (6) W Mental Philosophy.	F (2) W Drawing.	F W Sewing.	F M Carpentry.	W Printing.	W Telegraphy.	W Music.
SECOND HOUR. 9:30—10:20.	F (3) M Algebra.	F (2) W Elementary Physics.	F (3) W Farm Economy.	F W Practical Agriculture.	F (½) W Drill in English, "B."	F (5) W Modern History.	F (½) W Drawing.	W Household Economy.	F W Black-smithing.	M Printing.	W Telegraphy.	W Music.
THIRD HOUR. 10:20—11:10.		F (4) W Advanced Physics.	F (2) F Practical Agriculture.	F (3) F Practical Horticulture.	F (½) W Drill in English, "B."		F (6) W Drawing.	W Sewing.	M Wagon-making.	W Printing.	W Telegraphy.	W Music.
FOURTH HOUR 11:10—12:00.	F (4) W U. S. Con., Polit. Econ'y.	F (5) W Meteorology.	F (2) F Practical Agriculture.	F (3) F Practical Horticulture.	F (1) W U. S. History.		(1) Drawing.	W Sewing.	F M Carpentry.	M Printing.	W Telegraphy.	W Music.
FIFTH HOUR. 12:00—12:50.	F (4) M Surveying.			F (5) W Landscape Gardening.	F (½) W Drill in Arith., "B."			W Sewing.	W Scroll-sawing.	W Printing.	W Telegraphy.	W Music.

F, Farmer's Course; M, Mechanic's; W, Woman's; (1) refers to year in Course.

MARRIED.

STEWART—WEEKS—At the residence of the bride's parents, near Irving, Marshall county, Kansas, on Monday morning, December 25th, 1876, by Rev. Holmes, MR. W. C. STEWART, of the Agricultural College, and MISS ABBIE C. WEEKS.

We have not sufficiently recovered from the surprise occasioned by the above transaction to be able to do it justice in the way of a notice; but we heartily wish the bride and groom as much of this world's good things as they can comfortably enjoy, and only enough of the reverses of life to enable them to appreciate prosperity.

THE INDUSTRIALIST.

THURSDAY, DECEMBER 28, 1876.

[Advertisement.]

The Commonwealth.

Prospectus for 1877.

One year ago the Commonwealth issued a declaration of its principles and purposes. This declaration embodied briefly the expression of a determination to stand by the Republican party; of a belief in "honest money" as distinguishable from an irredeemable paper currency, and of a general conviction that the first duty of a newspaper is to tell the news, and of a Kansas newspaper to give Kansas news the precedence.

A year has passed and has shown that the Republican party is, more than ever, necessary for the preservation of liberty and law in this country. In regard to the financial question this much, if no more, has been decided at the polls, that the people are opposed to wild theories of the inflationists.

The course of the Commonwealth, as a political and news journal, has been abundantly sustained. An enlargement of the daily has been found necessary, and the circulation of the paper has steadily increased. In view of these circumstances the Commonwealth has no new policy to announce, but will adhere to the course marked out in the past.

Kansas news will continue to be a specialty, and the three departments of "State Items," "Kansas Farming," and "Kansas Churches," will be diligently collated from our State exchanges, while by free use of the telegraph and special correspondence every event of general interest which transpires in the State will be laid before our readers.

In the files of the Commonwealth may be found a history of the State government in every department, executive, legislative and judicial. The syllabi of decisions of the Supreme Court are published in the Commonwealth by authority. The legislative reports will, during the coming session, be made, as heretofore, full and complete. The "Legislative Summary," which was generally commended and freely used by the press of the State last winter, will be made a regular feature.

In submitting this brief statement, it is desired that it be distinctly understood that the Commonwealth sets up no claims to be the "leading State paper," nor assumes to be the "organ" of any man or set of men save the editors and proprietors. It bases its claims for support on its merits alone, and the attention of people who wish a Republican paper published at the State Capital is respectfully solicited.

Especial attention is directed to the weekly Commonwealth, a forty-column paper, with few advertisements, and containing all the reading matter that appears in six issues of the daily.

TERMS:—Weekly, three months, 50 cents; six months, $1.00; one year, $2.00. It is always stopped when the time for which it is paid expires. Daily, $10 per year.

Specimen copies sent free on application.
Address, F. P. BAKER & SONS,
Topeka, Kansas.

Mathematics.—Practical, direct and thorough drill in Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics and Engineering. Work in Field, with Tape Line, Chain, Compasses, Transit and Level. The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

Standard Stock! Standard Work!! Standard Prices!!! Anything in the line of Printing and binding done as well as any where in America, at the Kansas Publishing House, Topeka.

The Annals of Kansas, by Daniel W. Wilder Published by Geo. W. Martin, Kansas Publishing House, Topeka. Price $5.

Telegraphy.—Four miles of line, twenty five line instruments, and daily instruction and drill by an experienced operator.

Kansas Publishing House.—Standard Stock, Standard Work, Standard Prices, to be had at the Bindery and Blank Book Manufactory of George W. Martin, Topeka, Kansas. Orders from counties and townships solicited. All sorts of books made, bound and rebound. Legal Blanks, Seals, Stationery and Job Printing.

Printing!—Daily instruction and drill in the work of a First-Class Printer. The Literary Departments offer a thorough education in the construction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping; and in Industrial Drawing, as the best developer of that taste necessarily exercised by every good Job Printer. The Printing Department is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer. Besides regular class instruction in printing, the weekly publication of the INDUSTRIALIST by the Department furnishes advanced students the requisite drill in newspaper work.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

---

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

---

Press, Girard. Established 1869. Official paper of county and city. Republican in politics. Wasser & Riddle, Editors and Proprietors. 22-3m.

News, Peru. F. G. Moore & Co., Publishers and Proprietors. $1.50 per year. A newsy sheet published in the interests of Chautauqua county. 22-3m

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Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-3m

---

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

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Expositor. Concordia. Only home paper in county. Large circulation. Large patronage. Independent. $1.00 a year. J. S. Paradis, Editor and Proprietor. 33

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

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Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Kansas Star. A weekly paper published every Saturday at the Kansas Institution for the Deaf and Dumb. Subscription price, fifty cents per year, payable in advance. Address all communications to E. W. Bowles, Olathe, Kas.

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

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KANSAS STATE AGRICULTURAL COLLEGE.

Board of Regents.

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FACULTY.

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E. M. SHELTON, Prof. Prac. Agricul., Sup't Farm.
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J. E. PLATT, Prof. Elem'y English, Mathematics.
C. V. RILEY, Lecturer on Entomology.
D. J. BREWER, Lecturer on Practical Law.
A. TODD, Sup't Mechanical Department.
A. A. STEWART, Sup't Printing Department.
W. C. STEWART, Sup't Telegraph Department.
MRS. M. E. CRIPPS, Sup't Sewing Department.
MRS. M. L. WARD, Teacher of German and French.
MRS. E. M. KEDZIE, Teacher Industrial Drawing.
MRS. H. V. WERDEN, Teacher of Inst'm'nl Music.
GEORGE H. FAILYER, Assistant in Chemistry.

THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial Pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; in Book-Keeping and Practical Law. Words, numbers and lines are the tools used by all industrialists in conveying or preserving ideas; and our endeavor is to make the student a ready workman in the art of using these tools for practical purposes, rather than to make him a critic of fancy English or a professor of abstract Mathematics.

FARMER'S COURSE.

Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the Structure, Growth, and Value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, in the Wood and Iron Shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

MECHANIC'S COURSE.

To Mechanics, in addition to the studies of the Farmer's Course, applied Mathematics and Industrial Drawing are more extensively taught. Besides this literary education, the student is taught daily in the particular workshop of his trade. Special advantages are thus offered to those who wish an education as a Carpenter, Cabinet-maker, Wagon-maker, Blacksmith, Turner, Carver, Engraver, or Printer. No charge made for the use of tools or material for class practice.

WOMAN'S COURSE.

The course of study for woman is more practical, and, therefore, more sensible than that found in any other institution in the United States. The studies are shaped with reference to the liberal and direct education of woman as a woman instead of as a man, and as an industrialist instead of a butterfly. Among the special features of the course are Physiology and Special Hygiene, Household Economy, Farm Economy, Gardening, Household Chemistry, etc.

The workshops include those of the Milliner and Dress-maker, Printing, Telegraph, Scroll-Sawing, Carving, Engraving and Industrial Music.

Superior advantages are offered to students of higher Chemistry, to Mineralogists, Druggists, Operators, and Workers in metals.

Full collections of the Plants, Insects and Birds of Kansas, are being made as rapidly as possible.

☞TUITION ABSOLUTELY FREE!☜

No contingent fees, except for use of pianos and organs in the Musical Department; and a charge of $1.00 per month for material and instruments used by male students in Printing and Telegraph Departments. Boarding ranges from $2.75 to $4.00 per week.

CALENDAR:—Winter Term begins Thursday, January 4th, 1877, and closes May 23d, 1877.

For further information, apply to
J. A. ANDERSON, President.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, JANUARY 4, 1877. No. 38.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Mechanical Department.

Report of Capt. Todd for 1876.

To the Board of Regents of the Kansas State Agricultural College:

GENTLEMEN:—Herewith is submitted statement of proceedings of the Mechanical Department for the year ending Nov. 30th, 1876.

You will see by the annexed report of expenses and receipts that the department has paid its own expenses, with a small balance in its favor, besides improvements that have been made in the shop in the way of machines, new benches, etc., also finished and unfinished work on hand.

Considering the unavoidable waste of material that must occur in teaching so many young men and boys to handle the tools and implements of the artisan, this must strike you as a favorable showing.

At the last meeting of the Board authority was given to employ a skilled workman in the carpenter shop for three months, as an experiment and to ascertain whether his wages could be returned in the shape of work turned out; consequently Mr. T. T. Hawkes was hired and commenced work Sept. 10th, and has proved himself a very pleasant man and master of his business.

I have urged on former occasions the necessity of having manufactured articles put up and finished in the shop, in order to teach the student the different trades. It gives me pleasure to report that since the commencement of the present College year, by the employment of a first class workman in the wood shop, this has been done, and the increased interest manifested by those who really desire to learn is very marked. It is not to be expected that many boys will make much headway without a pattern to work by, and if the department is allowed to continue this help in the shop it expects to show a very great improvement in the work turned out by the students over last year.

Since the last report of the department, the old blacksmith shop has been moved to its present location near the Mechanical building, and two forges with chimneys put up, the floor leveled up with dirt and a small cistern has been provided. There is no bellows or anvil for one of the forges, which is very much needed to give the class the proper facilities for practice.

During the past year, or since my last report, there were in the shops, at daily practice, between sixty and one hundred students. The present term, so far, there are between fifty and sixty at daily practice in the carpenter, cabinet, wagon, turning, painting, blacksmithing and scroll-sawing classes. There is needed very much a room for painting and varnishing work, that can be kept free from dirt. The department is now engaged in making the furniture for the Horticultural building and in putting the floor in the basement, in addition to other work in the shop in the shape of bureaus, tables, stands, wheelbarrows, brackets, etc. Appended is also an inventory of property in my care.

RECEIPTS AND EXPENSES FOR THE YEAR ENDING NOVEMBER 30TH, 1876.

	Receipts.	*Expenses.*
November, 1875		$100 45
December, 1875	$110 44	47 79
January, 1876	64 20	89 46
February, 1876	72 15	50 06
March, 1876	33 10	49 71
April, 1876	14 95	192 06
May, 1876	213 70	27 34
June, 1876	34 70	
July, 1876		1 00
August, 1876	15 00	55 46
September, 1876	83 78	236 05
October, 1876	254 17	163 94
November, 1876	184 23	
Total	$1080 42	$1013 92

Balance in favor of department, $67.10.

MACHINES AND WORK ON HAND, MADE SINCE LAST REPORT.

Material on hand	$25 00
One moulding machine	15 00
Four small tables	9 00
Twelve work benches	50 00
One extension table	10 00
Two bureaus	20 00
Two wash stands	20 00
Two wheelbarrows	8 00
Two cultivators	5 00
Two brackets	10 00
Total	$172 00

Department of Sewing.

Report of Mrs. Cripps for 1876.

To the Board of Regents of the Kansas State Agricultural College:

GENTLEMEN:—I respectfully submit for your consideration the following report of the work and instruction of the Sewing Department.

In accordance with your orders, the department has been conveniently fitted up with counters, shelves and drawers. The floors are carpeted, giving the rooms a comfortable and home-like appearance, which is, I assure you, appreciated by the young ladies.

My work is necessarily varied. During the year there have been under my instruction sixty-eight students. They have been engaged in the different branches taught in the department. We are not troubled with monotony, and really that is one of the most pleasant features in our work.

A good degree of proficiency has been attained by nearly all in the making of dresses and domestic garments. Two classes have received thorough instruction in the art of designing patterns, cutting and fitting dresses by charts, with a practical knowledge for conducting the business successfully. Millinery is a permanent branch in the department and is being successfully taught.

A course of lectures was delivered to a class of thirteen of the most advanced lady students. Subject—Advanced Physiology and Hygiene. These are but an introduction to a series in the course now in readiness. I have given time and thought to this subject, and hope to make these lectures pleasing and instructive. A more extended knowledge upon this subject is of vital importance to woman, both physically and intellectually. I hope at no distant day to be in possession of apparatus that will greatly enhance the value of instruction to the students in this class.

I spent most of my summer vacation in New York and adjoining cities, gathered many items of interest in visiting manufacturing establishments, and saw much that might and ought to be taught in this department, had we the means and time for that purpose. I would here remind the Board of Regents that the same necessity exists for goods in the department, to make it successful, that existed a year ago. An appropriation of five hundred dollars for materials to work upon would give the students a practical knowledge that can only be attained in that way. This would place the department in a position that would be partly self-supporting, and also assist the lady students to partly pay expenses while in College. I am anxious that the department should be progressive, and that the instruction given should also be thoroughly practical, and of permanent use to the students when they shall go forth to meet life's realities. I cannot omit to mention the excellent conduct of the young ladies of my classes. My duties have been arduous but pleasant.

Department of Instrumental Music.

Report of Mrs. H. V. Werden for 1876.

To the Board of Regents of the Kansas State Agricultural College:

GENTLEMEN:—Permit me to make the following report of the department of Instrumental Music for the year ending Nov. 30th, 1876.

Number of pupils enrolled, thirty-two; number of classes taught, twenty; amount received from tuition, $291.50. Some of the pupils have studied from one to two months only; all have made good progress.

Department of Telegraphy.

Report of W. C. Stewart for 1876.

To the Board of Regents of the Kansas State Agricultural College:

GENTLEMEN:—I hereby submit the following report of the Telegraph Department for the year ending Nov. 30th, 1876.

Number of students enrolled during the year, sixty. Amount of money received from students for use of instruments, blanks &c., since Aug. 24th, $18.00, for which amount I hold Treasurer's receipt. The department is not crowded this term as it has been heretofore. The present class is making better progress than any one has done since the department has been under my charge. Although but three students have received our certificates, there are at present nine at work as practical operators on various railroads in the country. The department greatly needs additional facilities.

THE INDUSTRIALIST.

THURSDAY, JANUARY 4, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE Winter Term of the Kansas State Agricultural College opened Thursday, January 4th, and will close Wednesday, May 23d, 1877. Persons desiring a thoroughly practical education should avail themselves of the opportunities here afforded.

THE New Year's Champion was an elegant issue, and brim full of Atchison and Kansas information.

THE Hon. A. H. Horton, of Atchison, and a Regent of this Institution, has been appointed Chief Justice of the Supreme Court. We congratulate the Judge and the State on his promotion.

WE wish again to call attention to a matter too often forgotten by our farmers, namely, the necessity for providing good water, in abundance, for farm stock during the winter months. As a rule, stock suffers very much more from thirst during the winter than during the summer months, as a little thought will convince any one. During a large part of the winter the streams are completely invested by the ice, and during cold weather cattle will suffer severely from thirst rather than travel considerable distances in search of water. Moreover, during the winter season dry food exclusively is consumed by meat cattle. Aside from sentimental or even humane considerations, the farmer cannot afford to neglect his stock in these particulars. The manufacturer may just as reasonably expect profit from a steam engine running with a half supply of water and fuel, as the farmer from stock which is half the time raving with thirst.— [Prof. Shelton.

THE winter is especially the time to clear up the score of odd jobs upon the farm that are certain to be neglected during the rush of spring and summer work. The rudest system of agriculture is that in which the labors of the season are confined exclusively to seed-time and harvest, and it makes no difference whether the farmer during the remainder of the year is a hunter or trapper, or a lounger about grocery stores. In either case we have a poor system, giving meager returns, and a society primitive to say the least. The thoughtful farmer, on the other hand, aims to make the labors of the season a continuous round, in which the "idle months" contribute their full share towards the crops of the "busy" season.

In the matter of hauling manure, especially, every farmer has it in his power this winter to make a telling stroke in the direction of next year's crops. There is probably no country in the world where manure acts more potently than in Kansas, and it is doubtful if there is another State the equal of Kansas, agriculturally, in which this important feature is so systematically neglected. The experience of the best farmers all over the world, amply confirmed by the researches of such scientists as Drs. Voelcker and Anderson, has shown conclusively that the best time to haul manure is in the fall and winter, and the best way to spread it is as fast as it is hauled upon the snow or bare ground.

Objections on theoretical grounds have often been urged against this method, but Dr. Voelcker has conclusively shown: First, that the odor arising from manure spread upon the surface of the land is no evidence of waste; and, second, that the earth itself rapidly absorbs the products of the disintegration and decomposition going on in the fertilizers.— [Prof. Shelton.

Hog Cholera.

From all quarters reports of the destruction of herds by this dire complaint pour in thick and fast. In one case forty animals are reported lost, in another sixty, and an exceedingly aggravated case was recently reported to us in Missouri in which one farmer lost three hundred and fifty large porkers. Whether this disease is contagious or not is a mooted question, many farmers of much experience maintaining that it is, and an equally large number showing facts which seem to indicate that it is not contagious. It is generally agreed that when the disease enters a herd, unless prompt measures are taken, only in rare cases do a few individuals escape. If the disease is not contagious, it seems certain that the same set of conditions — as to feed, shelter and general treatment — which are favorable to its introduction, are favorable to its continuous spread through the herd. An obvious corollary of this proposition is, change the conditions heretofore surrounding your herd,— give them different food, better bedding and general protection, keep them cleaner.

Until very recently it has been supposed that Kansas herds enjoyed a blessed immunity from the ravages of this disease. This notion has been most rudely dispelled by the events of the past six months.

A large number of our Kansas exchanges mention the prevalence in their several localities of a peculiarly destructive disease of swine, but question its identity with the cholera of Illinois and Missouri. Sometimes it is represented as beginning with a slight cough and ending in a "galloping consumption;" again, it takes the form of a violent purging; and still again, it assumes the rheumatic type. Without going into details, and granting that there are exceptions in special cases, we unhesitatingly assert that this is the hog cholera as it is known in Missouri and Illinois. The term cholera is doubtless a misnomer, that term being generally applied to a gastric type of disease, but if we keep in mind the various forms assumed by this disease it need mislead no one.

Early in the fall of 1876 the College herd of swine was attacked with what we were not slow in recognizing as the hog cholera. All told twenty animals took the disease,— the entire herd with one exception — and of these twelve were pigs one to four months old, the remainder being one and two-year-old hogs. The first symptom invariably was a refusal to eat, this being rapidly followed by a violent purging, and this again in many cases by a cough accompanied with great difficulty in breathing. In one or two cases great stiffness in the limbs and lameness was observed, and the sight of a number of young pigs was so seriously affected that partial blindness followed. Our total losses foot up two two-year-old sows — one barren — and seven young pigs. It is worth noticing here that the sows which died were descended from importations four and five generations back, while the three animals of our herd which are the offspring of imported stock were only slightly affected by the disease.

TREATMENT.

We do not pretend that the cholera when once firmly seated can be cured, but we unhesitatingly affirm that if prompt measures are taken, when the disease first appears in the herd, a large majority of the hogs may be saved. We say hogs, knowing that young pigs when sick from any cause can only be saved by a miracle.

As soon as the disease shows itself in the herd, attention to the following particulars becomes imperative:

1. Remove the sick animals from the herd to comfortable quarters, and provide the herd with fresh bedding and ample protection from the weather.

2. Avoid feeding corn in any form. Feed the sick animals milk exclusively, or milk mixed with a little middlings, and the entire herd with shorts, middlings, ground oats or rye. If the feed can be cooked, so much the better.

3. Let the entire herd have ready access to pure water, and keep constantly in the yard a pile of charcoal and ashes.

4. Keep in mind constantly this general truth: the hog is a cleanly brute which enjoys and pays for clean quarters, and especially his nature, no less than man's, demands a proper supply of nitrogenous foods.

Only a week ago we heard a careful farmer and well known Berkshire breeder assert that, after much experience, he had no longer any dread of hog cholera, for he could cure it with new milk alone.— [Prof. Shelton.

THE INDUSTRIALIST.

THURSDAY, JANUARY 4, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

Mr. Samuel Kimble, Jr., and Miss Anna Clark were married last Monday morning, and took the ten o'clock train for the East.

Miss Fairy Whiting started for Buffalo, N. Y., where she expects to remain for one or two years to complete her musical education. Miss Fairy is a persevering young lady, is much attached to her music, and we hope will be successful.

All the rooms in the different College buildings have been numbered to correspond with the numbers on the new assignment card, which the Printing Department has lately prepared. These numbers will prove a great assistance to new students.

Beginning with this number, the INDUSTRIALIST asks the privilege of visiting several gentlemen who have not previously received it. It does so for the purpose of making a weekly report to them of the condition and progress of the Agricultural College. In no case will a bill be sent to any except those who may become subscribers.

The following changes have been made in the time-table as published last week: Algebra will recite at the first and second hours; Engineering at the third hour; Farm Economy at the first and Physical Geography at the second hour; Drill in English "A" at the fourth hour, and Drill in Arithmetic "B" at the second hour; Drill in English "B" will recite to Mrs. Ward at the third hour.

The first day of this term found a larger number of students present than ever before received at the same time. On the tenth day of the last term 134 students were enrolled, and on the third day of this one there are 138. Many of the old students have not yet returned, and many new ones are yet to come. The present indications are that this will be the strongest term in the history of the Institution.

On Thursday morning at nine A. M. the chapel was filled with students ready for the new term. The enrollment was promptly made and studies assigned to more than a hundred of the old students. The several professors announced the text-books and first lessons, and twenty new students were examined. On Friday the recitations began and all the classes are now at work. Each term finds itself easier to start, and the classes are moving along as smoothly as if no break had occurred.

Students' Column.

At the last meeting of the Alpha Beta Society the following officers were elected for the coming term: President, W. P. Burnham; Vice-President, Miss Lizzie Williamson; Secretary, S. M. Ward; Treasurer, A. A. Stewart; Marshal, Wm. Ulrich.

By special invitation we attended the installation ceremonies of the Sons of Temperance, of Manhattan, last Tuesday evening. The large hall was well filled with members and visitors, and after the interesting and rather solemn ceremony of installation the Lodge adjourned to enjoy a social and supper.

We had heard of the mysteries of secret orders, and when those tables appeared, as if by magic, loaded with good things of every description, we concluded that if this was a regular feature of the Order we would join, and so told the chaplain that he might introduce our name and present us as a candidate for the trying ordeal of the far-famed goat and greasy pole.

But, seriously, we believe the Sons are doing a good work among the young people of Manhattan, and the old ones too, for that matter. We noticed several young men wearing regalias, and thus publishing the fact that they were pledged against intoxicating drinks, whom we had heretofore looked upon as candidates for the inebriate asylum.

If the christian people of Manhattan desire to aid the cause of temperance we advise them to labor for the success of this organization by recommending it to both old and young, by joining it themselves, and by earnestly devoting their energies to the overthrow of this gigantic evil. Let us as students take a firm stand in this army of temperance warkers, and use our influence with the students who come here from year to year, to the end that they may be pledged against the evil tendencies of this monster vice. ***

Students Enrolled Since Jan. 4, 1877.

NAME.	COUNTY.
Abbott, Frank C.	Riley.
Adams, Emma L.	Riley.
Anderson, Bernhard	McPherson.
Bailey, Willie E.	Osage.
Bayles, John A.	Riley.
Beamer, David A.	Nemaha.
Beck, Jno. W.	Riley.
Benjamin, Daniel A.	Atchison.
Blain, Arthur T.	Riley.
Briggs, Harry	Riley.
Brous, Wilber J.	Riley.
Brown, Ada E.	Riley.
Brown, Mark L.	Riley.
Browning, Lois A.	Riley.
Buel, Walter A.	New York.
Buell, C. Stewart	New York.
Buell, Delight N.	New York.
Burnham, Wm. P.	New Mexico.
Campbell, Emma	Illinois.
Campbell, Ettie A.	Riley.
Campbell, May	Illinois.
Campdoras, Leon S.	Shawnee.
Child, Ella	Riley.
Cole, Fannie J.	Riley.
Copley, Albert	Jefferson.
Cotton, Fred L.	Wabaunsee.
Cotton, Katie H.	Wabaunsee.
Cox, Geo. A.	Riley.
Cox, Lizzie R.	Riley.
Cripps, Edward V.	Osage.
DeForest, Rodman A.	Nemaha.
Delahay, Charles	Leavenworth.
Eckman, Emma F.	Osborne.
Eckman, Wilmer K.	Osborne.
Eells, Allan B.	Riley.
Elliot, Willard S.	Riley.
Ernst, Wm.	Lyon.
Everhart, Logan	Labette.
Failyer, Geo. H.	Cherokee.
Failyer, Mariam	Cherokee.
Failyer, Miriam	Cherokee.
Fraunberg, Wm. S.	Labette.
Freligh, Jno. H.	Cherokee.
Gifford, Frank	Davis.
Gist, Joseph	Riley.
Gist, Owen	Riley.
Glossop, Lydia	Riley.
Griffing, Wm. J.	Riley.
Gross, George M.	Davis.
Hibbard, Alice	Riley.
Hickey, Pierce	Marshall.
Houston, Grant U.	Riley.
Houston, Hortense	Riley.
Houston, L. N.	Riley.
Howard, Giles P.	Riley.
Howard, Walter C.	Shawnee.
Hoyt, Emma	Riley.
Hoyt, Fred O.	Brown.
Hughes, Frank	Leavenworth.
Huling, Orlando D.	Cherokee.
Humphrey, Carrie E.	Davis.
Humphrey, Louis E.	Davis.
Humphrey, Merritt C.	Davis.
Johnson, Charles A.	Pottawatomie.
Jones, Carrie L.	Wabaunsee.
Jones, Henry M.	Wabaunsee.
Jones, Horace B.	Wabaunsee.
Jones, Richard C.	Atchison.
Kershaw, Jarvis	Riley.
King, Carrie M.	Riley.
King, John	Marshall.
Knipe, Geo. D.	Riley.
Knostman, Amelia	Riley.
Knostman, Emma	Riley.
Lapp, Elwood	Neosho.
LaTourrette, Jas. F.	Colorado.
Leasure, Marion F.	Linn.
Lynch, Fred C.	Cherokee.
Little, Charles E.	Lyon.
Mails, Chas.	Pottawatomie.
Mann, Jno.	Rice.
McCallum, Albert M.	Davis.
McCallum, Charles P.	Davis.
McClanahan, S. L.	Crawford.
McConnell, Chas.	Riley.
McNair, Samuel E.	Wabaunsee.
Meacham, Mary A.	Riley.
Miller, Frank E.	New York.
Moore, Cassie J.	Shawnee.
Morgan, Sam'l M.	Lyon.
Neale, Cora A.	Illinois.
Noyes, Ida L.	Wabaunsee.
Parker, Mary G.	Riley.
Parish, Emma	Riley.
Parkerson, Fannie R.	Riley.
Peckham, W. H.	Riley.
Perry, Geo. H.	Riley.
Pillsbury, Nellie	Riley.
Platt, Augustus H.	Riley.
Platt, Geo.	Riley.
Prentiss, Portus	Atchison.
Rathbun, Phebe	Riley.
Reed, Corvin J.	Pottawatomie.
Robertson, Mary J.	Jewell.
Romick, Mary M.	Riley.
Roper, Nida A.	Riley.
Ruland, Frank C.	Butler.
Rushmore, Harry C.	Jefferson.
Salter, Lewis A.	Neosho.
Simpson, Emma	Riley.
Smith, Clement O.	Lyon.
Smith, Leslie H.	Shawnee.
Stiles, Albert H.	Wabaunsee.
Todd, Irving	Riley.
Ulrich, Corinna	Riley.
Ulrich, Edwin H.	Riley.
Ulrich, Wm.	Riley.
Vincent, Ella E.	Riley.
Walker, James	Pottawatomie.
Ward, Stanley M.	Ellenville, N. Y.
Webber, Stephen W.	Pottawatomie.
Wells, Arthur	Phillips.
Wells, Harvey A.	Phillips.
Whitney, Genevieve	Riley.
Whitney, Kittie	Riley.
Whitney, Willard A.	Riley.
Willey, Ida M.	Cherokee.
Williamson, Jos. E.	Shawnee.
Williamson, Lizzie	Royal Center, Ind.
Winder, Ivaloo	Washington.
Winne, Jno.	Riley.
Wood, Adelbert D.	Lyon.
Wood, Clarence E.	Pottawatomie.
Wright, Robert	Ford.
Wyland, Thomas J.	Jewell.

THE INDUSTRIALIST.

THURSDAY, JANUARY 4, 1877.

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GEO. C. WILDER. Agent.

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Miss Fairy Whiting started for Buffalo, N. Y., where she expects to remain for one or two years to complete her musical education. Miss Fairy is a persevering young lady, is much attached to her music, and we hope will be successful.

All the rooms in the different College buildings have been numbered to correspond with the numbers on the new assignment card, which the Printing Department has lately prepared. These numbers will prove a great assistance to new students.

Beginning with this number, the INDUSTRIALIST asks the privilege of visiting several gentlemen who have not previously received it. It does so for the purpose of making a weekly report to them of the condition and progress of the Agricultural College. In no case will a bill be sent to any except those who may become subscribers.

The following changes have been made in the time-table as published last week: Algebra will recite at the first and second hours; Engineering at the third hour; Farm Economy at the first and Physical Geography at the second hour; Drill in English "A" at the fourth hour, and Drill in Arithmetic "B" at the second hour; Drill in English "B" will recite to Mrs. Ward at the third hour.

The first day of this term found a larger number of students present than ever before received at the same time. On the tenth day of the last term 134 students were enrolled, and on the third day of this one there are 138. Many of the old students have not yet returned, and many new ones are yet to come. The present indications are that this will be the strongest term in the history of the Institution.

On Thursday morning at nine A. M. the chapel was filled with students ready for the new term. The enrollment was promptly made and studies assigned to more than a hundred of the old students. The several professors announced the text-books and first lessons, and twenty new students were examined. On Friday the recitations began and all the classes are now at work. Each term finds itself easier to start, and the classes are moving along as smoothly as if no break had occurred.

Students' Column.

At the last meeting of the Alpha Beta Society the following officers were elected for the coming term: President, W. P. Burnham; Vice-President, Miss Lizzie Williamson; Secretary, S. M. Ward; Treasurer, A. A. Stewart; Marshal, Wm. Ulrich.

By special invitation we attended the installation ceremonies of the Sons of Temperance, of Manhattan, last Tuesday evening. The large hall was well filled with members and visitors, and after the interesting and rather solemn ceremony of installation the Lodge adjourned to enjoy a social and supper.

We had heard of the mysteries of secret orders, and when those tables appeared, as if by magic, loaded with good things of every description, we concluded that if this was a regular feature of the Order we would join, and so told the chaplain that he might introduce our name and present us as a candidate for the trying ordeal of the far-famed goat and greasy pole.

But, seriously, we believe the Sons are doing a good work among the young people of Manhattan, and the old ones too, for that matter. We noticed several young men wearing regalias, and thus publishing the fact that they were pledged against intoxicating drinks, whom we had heretofore looked upon as candidates for the inebriate asylum.

If the christian people of Manhattan desire to aid the cause of temperance we advise them to labor for the success of this organization by recommending it to both old and young, by joining it themselves, and by earnestly devoting their energies to the overthrow of this gigantic evil. Let us as students take a firm stand in this army of temperance warkers, and use our influence with the students who come here from year to year, to the end that they may be pledged against the evil tendencies of this monster vice. ***

Students Enrolled Since Jan. 4, 1877.

NAME.	COUNTY.
Abbott, Frank C.	Riley.
Adams, Emma L.	Riley.
Anderson, Bernhard	McPherson.
Bailey, Willie E.	Osage.
Bayles, John A.	Riley.
Beamer, David A.	Nemaha.
Beck, Jno. W.	Riley.
Benjamin, Daniel A.	Atchison.
Blain, Arthur T.	Riley.
Briggs, Harry	Riley.
Brous, Wilber J.	Riley.
Brown, Ada E.	Riley.
Brown, Mark L.	Riley.
Browning, Lois A.	Riley.
Buel, Walter A.	New York.
Buell, C. Stewart	New York.
Buell, Delight N.	New York.
Burnham, Wm. P.	New Mexico.
Campbell, Emma	Illinois.
Campbell, Ettie A.	Riley.
Campbell, May	Illinois.
Campdoras, Leon S.	Shawnee.
Child, Ella	Riley.
Cole, Fannie J.	Riley.
Copley, Albert	Jefferson.
Cotton, Fred L.	Wabaunsee.
Cotton, Katie H.	Wabaunsee.
Cox, Geo. A.	Riley.
Cox, Lizzie R.	Riley.
Cripps, Edward V.	Osage.
DeForest, Rodman A.	Nemaha.
Delahay, Charles	Leavenworth.
Eckman, Emma F.	Osborne.
Eckman, Wilmer K.	Osborne.
Eells, Allan B.	Riley.
Elliot, Willard S.	Riley.
Ernst, Wm.	Lyon.
Everhart, Logan	Labette.
Failyer, Geo. H.	Cherokee.
Failyer, Mariam	Cherokee.
Failyer, Miriam	Cherokee.
Fraunberg, Wm. S.	Labette.
Freligh, Jno. H.	Cherokee.
Gifford, Frank	Davis.
Gist, Joseph	Riley.
Gist, Owen	Riley.
Glossop, Lydia	Riley.
Griffing, Wm. J.	Riley.
Gross, George M.	Davis.
Hibbard, Alice	Riley.
Hickey, Pierce	Marshall.
Houston, Grant U.	Riley.
Houston, Hortense	Riley.
Houston, L. N.	Riley.
Howard, Giles P.	Riley.
Howard, Walter C.	Shawnee.
Hoyt, Emma	Riley.
Hoyt, Fred O.	Brown.
Hughes, Frank	Leavenworth.
Huling, Orlando D.	Cherokee.
Humphrey, Carrie E.	Davis.
Humphrey, Louis E.	Davis.
Humphrey, Merritt C.	Davis.
Johnson, Charles A.	Pottawatomie.
Jones, Carrie L.	Wabaunsee.
Jones, Henry M.	Wabaunsee.
Jones, Horace B.	Wabaunsee.
Jones, Richard C.	Atchison.
Kershaw, Jarvis	Riley.
King, Carrie M.	Riley.
King, John	Marshall.
Knipe, Geo. D.	Riley.
Knostman, Amelia	Riley.
Knostman, Emma	Riley.
Lapp, Elwood	Neosho.
LaTourrette, Jas. F.	Colorado.
Leasure, Marion F.	Linn.
Lynch, Fred C.	Cherokee.
Little, Charles E.	Lyon.
Mails, Chas.	Pottawatomie.
Mann, Jno.	Rice.
McCallum, Albert M.	Davis.
McCallum, Charles P.	Davis.
McClanahan, S. L.	Crawford.
McConnell, Chas.	Riley.
McNair, Samuel E.	Wabaunsee.
Meacham, Mary A.	Riley.
Miller, Frank E.	New York.
Moore, Cassie J.	Shawnee.
Morgan, Sam'l M.	Lyon.
Neale, Cora A.	Illinois.
Noyes, Ida L.	Wabaunsee.
Parker, Mary G.	Riley.
Parish, Emma	Riley.
Parkerson, Fannie R.	Riley.
Peckham, W. H.	Riley.
Perry, Geo. H.	Riley.
Pillsbury, Nellie	Riley.
Platt, Augustus H.	Riley.
Platt, Geo.	Riley.
Prentiss, Portus	Atchison.
Rathbun, Phebe	Riley.
Reed, Corvin J.	Pottawatomie.
Robertson, Mary J.	Jewell.
Romick, Mary M.	Riley.
Roper, Nida A.	Riley.
Ruland, Frank C.	Butler.
Rushmore, Harry C.	Jefferson.
Salter, Lewis A.	Neosho.
Simpson, Emma	Riley.
Smith, Clement O.	Lyon.
Smith, Leslie H.	Shawnee.
Stiles, Albert H.	Wabaunsee.
Todd, Irving	Riley.
Ulrich, Corinna	Riley.
Ulrich, Edwin H.	Riley.
Ulrich, Wm.	Riley.
Vincent, Ella E.	Riley.
Walker, James	Pottawatomie.
Ward, Stanley M.	Ellenville, N. Y.
Webber, Stephen W.	Pottawatomie.
Wells, Arthur	Phillips.
Wells, Harvey A.	Phillips.
Whitney, Genevieve	Riley.
Whitney, Kittie	Riley.
Whitney, Willard A.	Riley.
Willey, Ida M.	Cherokee.
Williamson, Jos. E.	Shawnee.
Williamson, Lizzie	Royal Center, Ind.
Winder, Ivaloo	Washington.
Winne, Jno.	Riley.
Wood, Adelbert D.	Lyon.
Wood, Clarence E.	Pottawatomie.
Wright, Robert	Ford.
Wyland, Thomas J.	Jewell.

THE INDUSTRIALIST.

THURSDAY, JANUARY 4, 1877.

Department of Printing.

Report of A. A. Stewart for 1876.

Gentlemen of the Board of Regents:

In presenting my report for 1876, it gives me pleasure to state that, while no great changes have been made, and no revolution has taken place in our method of work, the students in the Printing Department have been making a sure and steady advancement. As time passes and experience accumulates, we gradually become better acquainted with the nature of our work, with its necessities and how best to supply them. For three years we have been teaching this art. Undertaken as an experiment, our brightest hopes have been realized in its having proved a success.

Seventy-three persons were enrolled in this department last term, and forty-eight this term. The method of teaching reported to you two years ago has been supplemented from time to time by such instruction and drill as was deemed advisable. Most of the students are very much interested in their work, and take hold of it with an earnestness and determination which means business; but there are others who handle type as they would fence rails, only with less success. Only a few of the students in this department ever work at the trade elsewhere. The majority of those who enter do so for the purpose of learning to spell, capitalize, punctuate, etc.; and so considerable time is spent in that direction, not to the neglect, however, of instruction in the work of a real printer.

At the beginning of the present term it was ordered that male students taking either Printing or Telegraphy should be "charged one dollar per month for the use of material and instruments, an opportunity being afforded to advanced students to 'work out' this charge if they so desire." This action has been beneficial in several ways. It immediately removed from the classes those persons who entered simply because they thought the work was nice and easy, and who were a hindrance to the really earnest students; it caused the classes to take a deeper interest in their practice because of the expense connected with it; if worked out, it was a source of income to the students and the department,— they deriving an extra amount of skill and knowledge corresponding to the time spent, and we obtaining assistance which we would otherwise have been compelled to hire. It is a good thing, and we would gladly second another motion to give the students in this department more time for practice.

The INDUSTRIALIST has been continued during the year, and may now be termed a permanent feature of the department and the College. The students show their appreciation of it in the substantial manner of subscriptions, and the leading firms in Manhattan patronize it. Our aim is to make the INDUSTRIALIST first-class in every respect, and to so conduct it that the compliments bestowed upon it by the newspaper fraternity and leading printers may be fully deserved.

Considerable work has been done this year in the way of printing circulars, envelopes, letter heads, pedigree cards, grade reports, etc., for which I have Treasurer's receipts; and we have just begun work upon a catalogue for the Institution.

The Legislature was asked to give $500 for the further equipment of this department, and it appropriated $200, which has been expended in the purchase of type and other needed material. We need the remaining $300 as badly now as we did last year, and I therefore ask for the appropriation of that amount, to be used in the purchase of such material as the work we are expected to do requires.

Accompanying this report is an inventory of all the property in possession of this department, amounting to $1,197.29.

Report of Prof. M. L. Ward as Librarian for 1876.

To the Board of Regents of the Kansas State Agricultural College:

GENTLEMEN:—The Library belonging to the Kansas State Agricultural College at the date of my last report contained about twenty-seven hundred volumes. There have been added during the year: Bound volumes, 24; unbound reports and pamphlets, 17; Agricultural papers — The Ohio Farmer, 1857-1863, 12 volumes; Moore's Rural New Yorker, 1857-1869, 13 volumes; Vermont Record, 1867-1868, 2 volumes; Mirror and Farmer, N. H., 1867-1869, 3 volumes; Field Notes, Ohio, 1861-1862, 2 volumes; Western Rural, 1867, 1 volume; Reports of the Royal Agricultural Society, England, 1839-1874, 61 numbers.

We are indebted to the courtesy of Senators Harvey and Ingalls, and Hon. W. A. Phillips, for several valuable public documents; among them the reports of the Hayden Survey.

The Agricultural papers were secured by Prof. Shelton at a small cost.

The reports of the Royal Agricultural Society, a valuable addition to the agricultural department of the Library, were purchased by the Institution at the cost of fifty-two dollars.

A few volumes of reports have been obtained by the librarian. Many valuable acquisitions to the library might be made annually by exchange, or by soliciting donations, if the librarian had a small sum of money at his disposal to pay expressage and postage.

The Library is still kept in the old building. During the term it is opened every Saturday from 9 to 11 o'clock A. M., and every Monday from 2 to 3 o'clock P. M.

The same urgent necessity exists for an appropriation to replenish the Library in all of its departments as existed one year ago.

The Annals of Kansas, by Daniel W. Wilder Published by Geo. W. Martin, Kansas Publishing House, Topeka. Price $5.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, THURSDAY, JANUARY 11, 1877. No. 39.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Grasses.

[A Lecture delivered before the Kansas State Horticultural Society, by Prof. E. M. Shelton, at its Ninth Annual Meeting, held in Manhattan, Dec. 14th, 15th and 16th, 1875.]

The subject of this discussion, Mr. President, if not equally important to the horticulturist and general farmer, is one I apprehend of great interest to both. Of its importance to the general farmer, I need say nothing here; the Scripture saying, that "all flesh is grass," has a literal significance that every thoughtful farmer appreciates. In truth, this subject of the grasses lies at the foundation of all improved systems of agriculture. To-day if you could dispossess the farmer of all the grasses (and I use this term in its agricultural, not scientific sense), you would rob the field of its fertility and the farm of its flocks and herds, and you would compel a complete reorganization of our agriculture upon some such basis as that of China, or of England in the middle of the seventeenth century.

In the stormy days of the Protectorate, one of Cromwell's hard-faced country squires represented the commonwealth at the court of the King of Bohemia. This man, in the blaze and glitter of courts, never once forgot his rural tastes, but eagerly he watched the matchless skill of those slow-paced Dutch farmers. Returning to his home, he communicated his observations to a Polish friend—a rural writer, an agricultural penny-a-liner, a Geo. Geddes or Jos. Harris of his day, if these gentlemen will pardon me. Without much ado, this writer compiled a little book which he quaintly called "A Discourse of Husbandry used in Brabant and Flanders, showing the wonderful improvement of land there." Now, this may seem a small matter, but this little book—and I say it on high authority—is one of the most important agricultural works ever printed, for it argued most powerfully and effectively for the general and systematic cultivation of two little plants that are the basis of systematic farming; I refer to clover and turnips. English agricultural writers generally have agreed to date improved farming from the appearance of Hartlib's book in 1650.

In our own State the situation in respect to the grasses is a peculiar one, and not unlike that of England in the seventeenth century. It is safe to say that our Sir Richard Weston has not yet spoken; our Hartlib yet maintains a "mute inglorious" silence. My friends, this is a tremendous question, and one overshadowing all others connected with the general subject of tillage in our State. If it can be shown that the cultivation of the "tame grasses," so called, including of course the clovers, is from climatic and natural causes an impossibility in Kansas, it follows necessarily and can be proved as conclusively as moral reasoning can prove anything, that this State is incapable of supporting a dense agricultural population; that that slovenly, scourging system, called "pioneer farming," is the highest style of farming our State is capable of; that a large portion of these beautiful prairies must ever be given over to the nomadic herdsman. To many this may seem like an extreme statement, but let us look at it in the light of practical facts. We are just now in the midst of a Kansas year of plenty, and this we all know means a good deal; it means as much in one direction as our cries for "aid" last winter did in another. It means "aid" this winter, but that kind which railroads and steamboats and capital can give us in unburdening the land of what the English generally call "corn." But with all this plenty we are not quite happy, for every one of us knows that even Kansas crops of corn at fifteen to twenty cents, in a depreciated currency, are a snare and delusion; that wheat at seventy-five to ninety cents per bushel is profitable—but only to the middlemen. You horticulturists, I apprehend, understand better than we the art of making sales; at least I hear no complaints this fall of your difficulties in disposing of orchard products. We may view this matter as we like, but the real wealth of this State, when we take into account the cost of production, is its flocks and herds; and these get their value from the grass that so abundantly covers our untilled acres. The difficulty, however, is here: we can't make this grass assist us as horticulturists and farmers; we cannot make this prairie grass manure our orchards, beautify our lawns, or take a place in the rotation. In short, like the Indian and buffalo, it is incapable of civilization. Crop it closely, and it disappears, and where it once stood, coarse, flaunting weeds defile the landscape. From all over this great West, from Nebraska, Colorado and Texas, the cry goes up that the native grasses are disappearing, and they do not return. Indeed, I notice in one of our prominent journals the claim put forth that this process has already gone so far as to affect the meat supply. This comes home to most of us. The inference from all this is plain: with prairie grass alone, "ranges," not fields, must pasture our herds; the "cattle-man" and farmer must continue two separate individuals, as in the sparsely-populated regions of Texas and Colorado. This explains in part what I mean by saying that this question of the grasses overshadows all others connected with the general subject of tillage.

But there is another aspect to this question, which makes my meaning more plain. When these beautiful valleys and fertile prairies are generally occupied, as they will be if our posterity is to have a continuous flow; when this takes place, then we shall find ourselves compelled to adopt better and more perfect systems of culture. "Our limits will be circumscribed, our boundaries set." When our tilled acres become exhausted or foul with weeds, we can no longer abandon them for the time and break up more prairie—for the prairie will have been broken, or be owned by our neighbor. Then will that cry go up, if history repeats itself, that our lands are fading and fouling, and the crops proportionally diminishing. Then shall we begin to get a faint conception of the eastern concern for manure. If at this time we have grasses that are even tolerably reliable, we can meet this question squarely and we can solve it. We can then alternate pasture fields with fields of growing grain, and while we are manufacturing our animal products upon the pastured field we shall in the cheapest and most effective way increase its grain-producing capacity. If we have not these grasses, why, then, we may never feel their need, as in the case I have imagined. We shall very fairly illustrate the old Belgian adage: "No grass, no cattle; no cattle, no manure; no manure, no crops."

Some critical friend may here ask, What has all this to do with the object of this meeting—with horticulture proper? I answer, that nowhere, to my knowledge, is the line separating agriculture and horticulture sharply defined. The two subjects are intimately and inseparably associated; and more than this, they are interdependent to a very great extent. Certainly, we have yet to see a people with whom horticulture had attained any considerable growth, whose agriculture was debased, and without the impulse of improvement. In nothing do these two departments approach more intimately than in this matter of the grasses. Your beautiful art will seem wondrous bald and imperfect if our lawns are refused Nature's green carpet; and certainly your orchards will be at a sad disadvantage if they are to be denied the favoring influences of the sod in its proper place and season.

From my first acquaintance with this State, this subject has impressed my mind powerfully; and from the outset I have endeavored hopefully, though not without misgiving, with the time at my disposal to ascertain some satisfactory data that might be of use to the practical man. To-day, without attempting a discussion of the advantages of even a large part of the grasses which might seem of use in this latitude, I ask your attention briefly to a few facts with reference to plants with which I have experimented upon the College farm.

The blue-grass, botanically called *poa protensis*, has many excellent qualities which commend it to the wants of a very large class. In a greater degree than any other grass suitable to this latitude, it combines the qualities of beauty and utility; hence, to the lawn and the meadow, to the stockman and the gardener, it is almost equally valuable. While blue-grass flourishes best in a soil that is partly shaded, it admirably withstands the effects of drought. A dry, warm, calcareous soil is best suited to the growth of blue-grass, and if to this can be added a permeable clay subsoil, we may pronounce the conditions very favorable, so far as soil

and subsoil are concerned. I regard this question of subsoil as of very great importance, and one that cannot be overlooked. My experience has been this: where the subsoil consists of loose sand, as with a large proportion of these bottom lands, there is great difficulty in obtaining a "catch;" and even where this is done, the plants fail to tiller, and the drought affects them powerfully. The great difficulty with the cultivation of blue-grass lies in obtaining the "stand." When this is once obtained upon such a soil and subsoil as I have described, I am satisfied that it is as sure a crop as any grown in Kansas. In proof of this, let me state a fact. Upon the College farm we have three or four considerable patches of blue-grass, one of them nearly two acres in extent. All are upon high, dry and very poor knolls, and although we have had two years of grasshoppers, and during that time drouth enough for a lifetime, this grass has made a continuous growth, and is even now a mass of green blades. I do not wish to be understood as asserting that the difficulty in obtaining a stand is one peculiar to Kansas: it is not. Missouri farmers tell me that even in that paradise of blue-grass, it is nothing uncommon for them to seed and re-seed three or even four times before a satisfactory catch is obtained. Then let us have patience, and above all let us not trust entirely to "luck," and utterly ignore common sense when we seed down our door-yards. I know several gentlemen in this vicinity who, with commendable patience, regularly seed their grounds every spring, by sowing blue-grass seed upon the late snows. They argue that this is the way the thing is done in the East. Now, no eastern farmer can live in Kansas a couple of years without learning a good deal; but what he learns is as nothing compared with what he unlearns. I have got so far in this myself, that I feel like commending from the first, any agricultural project of which it can be said, "They don't do so in the East." The plan of sowing such bulky seeds as those of the clover and timothy plants upon the surface of the ground, is a very successful one in the Eastern States, but when it is applied in Kansas, and to such seed as that of blue-grass, a successful growth might be counted an agricultural miracle. The seed of the blue-grass is very light; a whole bushel weighs but fourteen pounds. It contains but a small portion of nutriment for the germ, and in its young state it makes a very feeble growth. Such seed, if left upon the surface, or even at a slight depth in the ground, is carried away by the first of our "gentle winds," no one knows whither. If in this situation the seed, by any favorable combination, germinates, its early growth is so slow and feeble that the ground about it is dried out completely before its root has reached permanent moisture, and it perishes from this cause. Instead of seeding in the spring, I should say sow blue-grass in the early fall, or late summer seasons; then, if the fall rains follow, a strong growth will be made before frosts can affect the plants. This plan has an additional advantage: if the fall seeding fails, the process can be repeated the following spring.

I am satisfied that success can rarely be depended on where the seed-bed is not properly prepared. The tilth should be fine, if not deep, and if beneath this the soil can be left firm, and even hard, it retains the moisture better, and the plant will make a more vigorous growth. After seeding, harrow thoroughly both ways, and follow with the roller. We have had a very satisfactory experience with this method of seeding. Last spring we seeded seven acres of ground to timothy, and with the timothy seed mixed a single bushel of blue-grass seed — enough of itself to seed about three-quarters of an acre. To-day I can show on every five or six feet all over this piece of ground — in short, wherever a seed dropped — a living, healthy plant of blue-grass. The procuring of the seed is another matter well worth more attention than is usually given it. I should consider all seed worse than worthless that is not procured from an exclusively blue-grass region. Fully one-fourth of the blue-grass lawn (so called), that I have ever observed in this State, are not composed of blue-grass at all, but are made up of one of the half-dozen worthless wire grasses that are the pests of the eastern farmers' fields.

These are by no means all the facts that go to make up blue-grass culture, but they are essentials in which, if ordinary care and good sense be exercised, success with this most beautiful and useful of grasses may be reasonably expected.

Timothy or Herd's Grass is a name that calls up a hundred pleasant recollections of eastern farm-life. Flint tells us that "the name of Timothy, by which it is more generally known over the country, was obtained from Timothy Hanson, who is said to have cultivated it extensively, and to have taken the seed from New York to Carolina. It is frequently called Herd's Grass in New England and New York, and this was the original name under which it was cultivated. It was derived from a man of that name, who, according to Jared Eliot, found it growing wild in a swamp in New Hampshire, more than a century and a half ago, and began to cultivate it." Be this as it may, timothy is the most valuable of all America's contributions to the grasses, for of all these it is the most valuable as a crop to cut for hay. As a lawn or pasture grass, however, it has little value in comparison with blue-grass. This is especially true in our own State, where its worst traits seem to develop; for here, so far as my own experience has gone, it fails to make a uniform sod, but grows in coarse bunches, amounting almost to clumps, about the meadow. Nevertheless, timothy has many excellent qualities that commend it to the cultivators of this State. From the large store of nutriment contained in the seed, it takes root very readily; upon a clay subsoil it withstands drouth excellently; it is one of the earliest grasses in the spring, and in this locality it is ready for the scythe by the middle of June. The proper place for timothy for lawns, is in a mixture with blue-grass. From the ease with which the stand is obtained in this climate, this plant is really valuable in this place, for in course of time the blue-grass will drive out the timothy, or if not, it will fully occupy the space between the bunches of timothy, and in this way remove its objectionable features.

Our own experience with this grass may be briefly stated: We have upon the College farm, all told, sixteen acres of timothy, nine acres of which were seeded in the spring of 1873, and the remainder in the spring of 1875. Of the nine acres first seeded, seven acres in 1874 gave a ton and a half of excellent hay per acre; and two acres reserved for seed yielded fully four and one-half bushels of clean seed per acre. The past year this crop promised even better results than were obtained the year previous, up to the time the whole was destroyed by grasshoppers.

So much for our experience with the grasses proper upon the College farm. I think you will agree with me, that while we have some facts that give this question an ugly look, we have some reasons for encouragement. The thought that gives me most encouragement is this: if through seasons of overwhelming disaster, such as 1874–5 have been in this locality, these grasses not only live but make crops, the average Kansas season may be safely counted upon, so far as grasses are concerned.

The plant Alfalfa about which so much has been said and written in this State during the past year or two, it seems to me, viewing the matter from an outside standpoint, deserves a good deal of attention from the horticulturists of the State. Both blue-grass and timothy are open to serious criticism as grasses to be cultivated in the orchard, whatever may be said of them for lawn purposes. As before mentioned, the blue-grass is slow and diffident in germinating; moreover, when once in possession of the ground, this plant occupies it so thoroughly with its dense mass of roots as to often seriously injure the trees. Timothy, again, makes an indifferent growth on ground partly shaded, and when the crop of hay or seed is removed, it notoriously exhausts the soil, thus defeating the prime aim of the orchardist. To the *alfalfa*, few of these objections apply. It germinates as easily and takes root as vigorously as corn; it tillers but slightly, and during a large portion of the year interposes almost nothing between the rainfall and the roots of the trees; and although not averse to a partial shade, it withstands the effects of drouth as perhaps no other cultivated plant can. When to all this is added the fact that it sends its roots to enormous depths (frequently twelve or thirteen feet), and makes two or three large large crops of hay each season, its value to the orchardist as a fertilizing agency will be appreciated by all.

From its habit of sending its roots to great depth, the question of subsoil is of even greater importance to the cultivation of alfalfa than to the plants I have discussed before. A permeable, well-drained subsoil is one of the imperative demands of this plant; and if to this we can add a fine, mellow tilth, so far as soil and subsoil are concerned we have supplied the most important conditions.

The question of seed can hardly be overlooked in discussing matters pertaining to the cultivation of alfalfa. Many years ago the Spanish settlers of Chili and other South-American States transported to their new homes the seeds of this plant, called in Europe "lucerne." Here the plant became acclimated, and assumed characters well calculated to endure the arid climate of these States. From thence it was carried north to California, whose enterprising farmers were not slow to avail themselves of this invaluable forage plant. The success of this plant in California has been very marked. Indeed, it has well-nigh superseded all other forage plants along the Pacific coast. It has been very fortunate for the cultivation of this plant in Kansas, that the seed hitherto sowed has been obtained from California instead of the eastern States, for there is a marked difference in the plants obtained from the two points.

In conclusion, Mr. President, let me ask for this subject the earnest attention of the horticulturists of the State, believing, as I do, that this is one of the vital matters connected with your art and mine, and one

that we can only neglect to our great peril. In an experimental work of this kind, you have many advantages not possessed by the general farmer; you are better organized—I had nearly said you are more intelligent—you are more painstaking; your methods are more perfect, because from the nature of your business you are compelled to "cultivate *well*, not much." For all these reasons, it seems to me a great responsibility rests upon your shoulders. But do not suppose that a work of this kind, even on the small scale that you may attempt, can be carried on without cost of money, and what is worth more than money, labor and time. Above all, do not commit the vulgar error of supposing that anything of this kind is an easy, simple undertaking, and one that is only to be commenced to be successful. This art, my friends, of yours and mine, is the oldest of all arts; it is older than science—aye, older than religion; and so long has the very life of nations hung upon the rough methods of the tillers of the soil, that it is safe to say that no results that you or I may arrive at will materially change or influence them. Dr. Clark, of Massachusetts, says that it requires at least ten years of careful experiment to establish an agricultural truth. Messrs. Lawes and Gilbert have been at their work for upwards of thirty-six years, and have expended annually from $15,000 to $20,000 in it, but I doubt much whether their most enthusiastic disciple can present a single new principle from all the chaos of facts with which they have enriched agricultural literature. The new facts of agriculture—facts which we suppose are our peculiar property—if we inquire carefully into their antecedents will generally be found to be matters forgotten long since by our Anglo-Saxon forefathers, by the Romans, and possibly by the Greek husbandmen. Every glimpse that we obtain of the remote past, but proves more clearly the half-guessed truth, that all progress is in cycles, and that the amazing stories of the "lost arts," is something besides the chimera of an enthusiast. But all this need not deter you and I from attempting something for our own farms and orchards. Yet of this we may rest assured: that whether we succeed or whether we fail, we shall be paid, and paid with no niggard hand.

THE INDUSTRIALIST.

THURSDAY, JANUARY 11, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER, Agent.

Number of students enrolled this term, **160.**

The electric bells attend to business as if they had been at it for a century.

Judge Brewer's lectures on Practical Law will be delivered during this term. Due notice will be given.

Our neighbor, the *Nationalist*, comes rushing along with eight pages and a new get-up generally. Success to it.

The INDUSTRIALIST is the only paper in Kansas that has never said anything about politics or the Teecher-Bilton business.

We are getting out a blank for reports of unexcused absences from recitations, which reports will be made at the end of each week, and—and—and!

If anybody wants to subscribe for the INDUSTRIALIST, the moon is exactly right for that kind of planting; in fact the moon, is always right on that question.

At the close of the second week of last term we had 134 students enrolled. At the same date in this term there are 160. If that fact doesn't speak for itself, then facts had better shut up.

The way the boys hustle around these cold days and don't stand in the halls, is a fine illustration of the mathematical problem of finding the shortest distance between two points, a hot stove being the point sought.

The biennial catalogue of this Institution will be gotten up by the Printing Department, and, so far as our facilities permit, will be presented as a sample of the kind of work this establishment can do.

An individual, specific, general and corporate invitation is hereby extended to every Senator and Representative, and to both Houses, to visit this Institution for the purpose of seeing that it really needs twice as large an appropriation as has been asked for.

We make no apology whatever for occupying so much of our valuable space with the still more valuable discussion of the grass question. The sooner a full test is made, and the grasses best adapted to Kansas determined, the better it will be for the tax-payer.

One of our new students walked forty miles during the late cold snap to attend College. He must be in earnest. And that reminds us of the one who last term walked from Emporia, and another who walked from Osborne county. That's business, without any gilt edge.

Stewart has been wrestling with the roller question, and dances around to suggest that no office in the State has a prettier set of rollers than the ones he has just pulled. When the cold snap put in an appearance, it knocked twenty per cent off the usual appearance of the INDUSTRIALIST, but we imagine this press-work will do.

W. C. Stewart has charge of the matter of assigning sittings to the students in Chapel, and executed that duty with dispatch and success so long as the benches and chairs held out, whereupon the surplus students had to be leaned up against the walls. As long as the wall space lasts, he thinks he can handle the problem, especially as the roof isn't occupied. The carpenters are at work on new benches.

Ordinarily a vacation has about the same effect on the machinery of a college that a three months' "lay up" has on that of a steamboat; but as a consequence of the systematizing of all our departments, the present term started off as if there had been no vacation. The recitations began the second day, notwithstanding the large number of new students to be examined; and the work done in the class rooms this week has been as steady and thorough as if no break had occurred.

Students' Column.

The Websters held their first meeting of the term last Saturday evening, electing the following officers: President, John King; Vice-President, R. A. DeForest; Secretary, J. E. Williamson; Treasurer, A. N. Godfrey. The debate was postponed, and the principal interest of the evening centered in the extemporaneous speaking, which was unusually lively. The name of Pierce Hickey was proposed for membership. REPORTER.

At their last meeting the Alpha Betas discussed the question, "Should the Natural Sciences be taught in the common district schools?" Affirmative, S. M. Ward; negative, W. Ulrich. Decision in favor of affirmative.

The usual order of extemporaneous speaking—during which the woman suffrage question was forever settled—was followed by the reading of the *Gleaner*, W. C. Howard and Miss Carrie Humphrey, editors. This number of the paper was well prepared and compared favorably with its predecessors, even if the editors were compelled to furnish nearly all the articles. The touching poetry and prose which so vividly and truly portrayed the feelings of certain members particularly attracted our attention. Then, too, there was the heading for short items—Boiled Up—a near relative to the INDUSTRIALIST'S heading—Boiled Down. S. M. Ward and W. P. Burnham are delegated to see that the Gleaner appears again in three weeks, and we will warrant a racy issue.

The library committee reported a list of books costing $78.50. The list contains poems, biographies, late scientific works, and novels. While there are some books which we do not admire, in the main the committee's work is well done. The next question for debate reads: "Did the United States do wrong in enfranchising the negro?" The Society opens its sessions at 1:30 Friday afternoons, and all the students are heartily invited to attend. M. QUAD.

THE INDUSTRIALIST.

THURSDAY, JANUARY 11, 1877.

Students Enrolled Since Jan. 4, 1877.

NAME.	COUNTY.
Abbott, Frank C.	Riley.
Adams, Emma L.	Riley.
Anderson, Bernhard	McPherson.
Bailey, Willie E.	Osage.
Bayles, John A.	Riley.
Beamer, David A.	Nemaha.
Beck, Jno. W.	Riley.
Benjamin, Daniel A.	Atchison.
Blain, Arthur T.	Riley.
Briggs, Harry	Riley.
Brous, Wilber J.	Riley.
Brown, Ada E.	Riley.
Brown, Mark L.	Riley.
Browning, Emma E.	Riley.
Browning, Lois A.	Riley.
Buel, Walter A.	New York.
Buell, C. Stewart	New York.
Buell, Delight N.	New York.
Burnham, Wm. P.	New Mexico.
Campbell, Emma	Illinois.
Campbell, Ettie A.	Riley.
Campbell, May	Illinois.
Campdoras, Leon S.	Shawnee.
Child, Ella	Riley.
Cole, Fannie I.	Riley.
Copley, Albert	Jefferson.
Cotton, Fred L.	Wabaunsee.
Cotton, Katie H.	Wabaunsee.
Cox, Geo. A.	Davis.
Cox, Lizzie R.	Davis.
Cripps, Edward V.	Osage.
Crowl, Jessie C.	Pottawatomie.
DeForest, Rodman A.	Nemaha.
Delahay, Charles	Leavenworth.
Eckman, Emma F.	Osborne.
Eckman, Wilmer K.	Osborne.
Eells, Allan B.	Riley.
Elliot, Willard S.	Riley.
Emmons, Geo. E.	Pottawatomie.
Ernst, Wm.	Lyon.
Everhart, Logan	Labette.
Failyer, Geo. H.	Cherokee.
Failyer, Mariam	Cherokee.
Failyer, Miriam	Cherokee.
Fletcher, Clinton	Missouri.
Fletcher, Ellen	Riley.
Fraunberg, Wm. S.	Labette.
Freligh, Jno. H.	Cherokee.
Frizzell, Edwin C.	Shawnee.
Frizzell, Ruric N.	Shawnee.
Gifford, Frank	Davis.
Gist, Joseph	Riley.
Gist, Owen	Riley.
Glossop, Lydia	Riley.
Griffing, Jno. S.	Riley.
Griffing, Wm. J.	Riley.
Gross, George M.	Davis.
Harvey, Henry	Sedgwick.
Hibbard, Alice	Riley.
Hickey, Pierce	Marshall.
Houston, Grant U.	Riley.
Houston, Hortense	Riley.
Houston, L. N.	Riley.
Howard, Giles P.	Riley.
Howard, Walter C.	Shawnee.
Hoyt, Emma	Riley.
Hoyt, Fred O.	Brown.
Hughes, Frank	Leavenworth.
Huling, Orlando D.	Cherokee.
Humphrey, Carrie E.	Davis.
Humphrey, Louis E.	Davis.
Humphrey, Merritt C.	Davis.
Jeffrey, George A.	Riley.
Jeffrey, Wm.	Riley.
Johnson, Charles A.	Pottawatomie.
Jones, Carrie L.	Wabaunsee.
Jones, Henry M.	Wabaunsee.
Jones, Horace B.	Wabaunsee.
Jones, Richard C.	Atchison.
Kay, James S.	Pottawatomie.
Kay, Jennie A.	Pottawatomie.
Kershaw, Jarvis	Riley.
King, Carrie M.	Riley.
King, John	Marshall.
Knipe, Geo. D.	Riley.
Knostman, Amelia	Riley.
Knostman, Emma	Riley.
LaTourrette, Jas. F.	Colorado.
Leasure, Marion F.	Linn.
Lewin, Jno.	Riley.
Little, Charles E.	Lyon.
Little, Kate.	Lyon.
Lynch, Fred C.	Cherokee.
Lynch, James H.	Cherokee.
Mails, Chas.	Pottawatomie.
Mann, Jno.	Rice.
McCallum, Albert M.	Davis.
McCallum, Charles P.	Davis.
McClanahan, S. L.	Crawford.
McConnell, Chas.	Riley.
McNair, Samuel E.	Wabaunsee.
Meacham, Mary A.	Riley.
Miller, Frank E.	New York.
Moore, Cassie J.	Shawnee.
Morgan, Sam'l M.	Lyon.
Neale, Cora A.	Illinois.
Noyes, Ida L.	Wabaunsee.
Parker, Mary G.	Riley.
Parish, Emma	Riley.
Parkerson, Fannie R.	Riley.
Peckham, W. H.	Riley.
Perry, Geo. H.	Riley.
Pillsbury, Nellie	Riley.
Platt, Augustus H.	Riley.
Platt, Geo.	Riley.
Prentiss, Portus	Atchison.
Rathbun, Phebe	Riley.
Reed, Corvin J.	Pottawatomie.
Riggs, Louis E.	Marion.
Robertson, Mary J.	Jewell.
Romick, Mary M.	Riley.
Roper, Nida A.	Riley.
Ruland, Frank C.	Butler.
Rushmore, Harry C.	Jefferson.
Salter, Lewis A.	Neosho.
Sapp, Elwood.	Neosho.
Schreiner, Ernest	Marshall.
Shaw, James	Riley.
Simpson, Emma	Riley.
Smith, Clement O.	Lyon.
Smith, Leslie H.	Shawnee.
Spooner, Matthew H.	Clay.
Stiles, Albert H.	Wabaunsee.
Todd, Irving	Riley.
Ulrich, Corinna	Riley.
Ulrich, Edwin H.	Riley.
Ulrich, Wm.	Riley.
Vincent, Ella E.	Riley.
Walker, James	Pottawatomie.
Ward, Stanley M.	Ellenville, N. Y.
Waters, Eben	Labette.
Webber, Stephen W.	Pottawatomie.
Wells, Arthur	Phillips.
Wells, Harvey A.	Phillips.
Whitney, Genevieve	Riley.
Whitney, Kittie	Riley.
Whitney, Willard A.	Riley.
Willey, Ida M.	Cherokee.
Williamson, Jos. E.	Shawnee.
Williamson, Lizzie	Royal Center, Ind.
Williston, Carrie	Riley.
Williston, Frank H.	Riley.
Wilson, Amos E.	Dickinson.
Winder, Ivaloo	Washington.
Winne, Jno.	Riley.
Wood, Adelbert D.	Lyon.
Wood, Arlie	Labette.
Wood, Clarence E.	Pottawatomie.
Wright, Robert	Ford.
Wyland, Thomas J.	Jewell.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, JANUARY 20, 1877. No. 40.

THE INDUSTRIALIST.
Published every Thursday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

An Address.

[Delivered before the Kansas State Teachers' Association, by Prof. H. C. Speer, President, at an adjourned meeting held in Topeka, December 26th, 27th and 28th, 1876.]

LADIES AND GENTLEMEN: — The hopes of those earnestly engaged in the work of education in Kansas for the past fifteen years have often been dashed to the ground by difficulties which, at the time of occurrence, appeared not only disheartening, but almost insurmountable. There have been times in the history of this Association of feverish and anxious expectation, followed by reverses of disappointment and defeat. Efforts have been made with little hope of fulfillment, followed by rich and unexpected results. Seeds sown by wise men in times of political excitement; in the midst of the absorbing interests of material prosperity; in other times when the people of Kansas were biting starvation; in times when extravagance was the virtue of the day; in other times of economy and "reform;" in times when the wildest dreams of future greatness governed the adjustment of public policies; in times of every complexion,— the seeds planted by the teachers of Kansas have developed and grown into the handsome results of to-day. There are members of this Association present who witnessed the beginnings, and with patient courage and perseverance fostered every result, and who are still working for the promotion of the interests to which they have devoted the vigor of their lives,— interests which, it is not too much to say, are of paramount importance to the State of Kansas. The history of the Kansas State Teachers' Association has marked, in its annual record of occurrences and debates, every depression as well as every elation of those interests. You have had occasions of congratulation over success, and occasions of anxious consideration of the means of averting impending calamity.

The year just closing has been marked by the beginnings of a return to that material prosperity and commercial activity without which there can be little improvement in educational work, or in any other element of public policy. It is exceedingly gratifying to note many indications of responsive activity in the work of schools. The improvement in attendance at the State University and the Agricultural College, and at the denominational schools; the ambitious organizations of high schools in a creditable number of the larger towns; the extension of the course of study in many village schools; the grading of the course of studies in a few district schools; the increased number of organized districts in the State; and the slightly advanced wages of teachers; — all these point out the return of more hopeful times, and should afford at once reason for congratulation and opportunity for wise and well-considered counsels. For, though you are called together in extraordinary session to consider the best means of securing the enactment of laws that will provide for a competent county supervision and for an adequate training of teachers for the public schools, there is every reason to think that the crippling of these agencies has been due to the great misfortunes that have befallen the State rather than to a lack of sympathy with the work aimed at. It cannot be true that the controlling sentiment of the people of Kansas is against the theory of supplying the means of training teachers for the public schools. It cannot be true that the Legislature of Kansas will not be found ready to embody in the laws of the State any recommendation of this Association that shall be found practicable and safe. The question that presented itself to the Legislature when this matter was under consideration last winter was not, Ought the State to educate its teachers? It was simply, *Does this plan of training teachers pay?* No answers could be presented except these:

1. The three normal schools of Kansas do not furnish any adequate supply of trained teachers for the common schools.

2. An adequate supply can never be furnished by this plan, except at enormous expense to the State.

This was the common sense of the question, and the action of the Legislature in refusing appropriation was an essential condemnation which met with essential endorsement by the people. Notwithstanding this, neither the action of the Legislature nor the general approval of public sentiment should be held to indicate either opposition or apathy. On the contrary, the intelligent sentiment of the State, the controlling element, is unquestionably in favor of normal training. It simply remains to present the plan that will meet public favor as one producing paying results. If the teachers of Kansas ever had an opportunity to prove themselves competent to advise wisely, forcibly and practically, one lies in the present meeting. It will not do to set forth a splendid theory of normal training adapted to a high stage of public education and to times of overflowing prosperity. All the elements that have acted as causes in bringing about the present state of things should be carefully weighed; and, together with the necessary conditions of thorough normal work, should determine the character of the system to be recommended. While you present the teacher's view of a perfect system of education, you must grant the trimming necessary to adapt it to the practical conditions surrounding us. The fashionable policy of politics — claim everything, concede nothing — will not do here. The exigency of the time demands that you show, not merely that a system of free normal training is a most important factor of public school progress, but that a system can be devised securing results worthy of the outlay. The character of your deliberations should be such as to commend the results to favor. There should be no marks of the influence of section; there should be no dominant interest to serve, nor any suspicion of any. Your action, to have weight with the Legislature, or the public, must be impersonal and professional. Let there be a full interchange of opinion, a calm comparison of suggestions, and a hearty support of the plan of action finally adopted, and the results will be fruitful of good and cannot fail to shape in large degree the school legislation of the coming session. The present condition of the county superintendency and of normal schools has aroused thought. There is a general feeling that the supply of trained teachers must be increased rather than diminished. The feeling of dissatisfaction with the present methods of normal work is not limited to this State. Commenting on this question, the Commissioner of Common Schools of Ohio says: "The expediency of establishing special training schools of high grade with complete exhaustive courses of study, for the large non-professional class of teachers, may be questioned. It will be difficult to convince the tax-paying population of any State that a scheme providing for even one-fourth of this class is either practicable or advisable. It will be equally difficult to prove that the value of the product is greater than the cost of production. *They demand less expensive agencies than these*, and it is the duty of statesmen to ascertain, if possible, *what they are*, and whether they can be successfully employed."

To a consideration, then, of means of securing extended usefulness through an agency whose efficiency is not yet fully recognized, the attention of your body has been called by your executive committee. I consider it not inappropriate, therefore, to discuss hastily the significance of some of the leading facts that must be weighed in your debates.

The obligation of the State, assumed in its Constitution, to support a system of free education, implies the obligation to make use of every necessary means of increasing the efficiency of teachers. A system, however perfect in theory, depends for its usefulness on the skill of administration. In education, it depends upon the skill of the teacher. In the centers of population and wealth, the question of securing good schools resolves itself easily into a question of demand and supply. Such communities are able to offer such pay, for such continuous and regular periods of time, as to secure men and women of ability and competent professional knowledge. It is equally true that sparsely settled and struggling agricultural communities are surrounded by such hard conditions as to preclude either continuous schooling or adequate pay for teaching. The average pay of teachers ranges from about $20 in "frugal Maine" to about $55 in "golden California," taking in agricultural Kansas at $30.75; this, too, for

[Continued on fourth page.]

THE INDUSTRIALIST.

SATURDAY, JANUARY 20, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

The Reason Why.

We are continually in receipt of letters asking whether a student cannot make such a selection of studies as may suit his inclination, instead of following the prescribed course. Pupils on the ground understand that this cannot be done; and, in addition to the statement in the circular, we take this method of notifying others to the same effect.

The reason for the rule lies in the fact that this is an Agricultural College, expressly endowed, designed and maintained for the chief purpose of giving those who intend to be farmers an education that will fit them for success in the work of a farmer, and giving to girls such an education as will best prepare them for the work of woman as an industrialist. These courses of study have been carefully framed to effect the proposed objects; and that they will, when fully followed, so do we have not the slightest doubt. Now, in view of the fact that the State of Kansas furnishes the buildings, and the United States furnishes the teachers and pays the current expenses of instruction, for the express purpose of educating the boys for the farm, or the girls for the shop, and does this without cost to the student in the shape of tuition or contingent fees, the question arises whether the Institution is under any obligation to cripple itself or increase its expenses in order that some one who ought to be at a University or Normal School may save railroad fare or board bills by attending the Agricultural College.

When such a proposition is analyzed, doesn't it show an intense brilliancy of that metallic lustre peculiar to brass? On what grounds, either of courtesy or equity, is a parent or pupil justified in asking that an agricultural college, or a woman's industrial college, shall drop its established methods for the purpose of furnishing a given student some other sort of an education than that for which the institution is designed? Our courses are framed to give an agricultural and trade preparation to the boy, and a working woman's education to a girl; and if either parents or pupils desire some other sort, let them go elsewhere for it. As long as we have anything to do with it, this Institution will be an Agricultural and Mechanical College for boys, as prescribed by the Congressional act, and an Industrial School for girls: it will neither be a High School, nor a University for the education of lawyers, doctors and preachers. And an understanding of the fact may save disappointment on the part of those who hope to "flank" the above regulation in some way.

The Governor's Message.

Gov. Anthony's message is a clear, incisive, vigorous presentation of the condition of the State, bristling with square-toed suggestions of remedies for various defects. We extract the passages which relate to education:

PUBLIC SCHOOLS.

The school population of the State, as shown by your State Superintendent of Public Instruction, is 212,977, of which 147,224 are found on our school rolls, and 89,896 in average attendance. The disparity between the number enrolled and the number in attendance is readily accounted for by reasons other than neglect of parents or want of interest with the young. The enrollment embraces all from the age of five to twenty-one years. The necessities of parents and children force abandonment of the school-house for the field and work-shop at an average age of not more than fifteen years.

The esteem in which public schools are held is shown in the fact that 4,636 pupils only are found enrolled in private schools. Total number of teachers employed in public schools — male, 2,402; female, 3,174; total 5,576. Average wages paid teachers per month — male, $33.66; female, $27.03. It is safe to say that the talent engaged is equal to the pay received, and that the order of talent will keep pace with the advance of compensation. The school property of the State is valued at $4,600,259, consisting of 3,881 school-houses, (of which 195 have been built the current year) value $4,167,948; school furniture, $367,552; school apparatus, $55,115; school libraries, $9,954; volumes, 9,644.

The magnitude of financial transactions will be appreciated on examination of the following exhibit:

RECEIPTS.— Balance in district treasuries, $214,968.47; amount received for teachers' wages, $574,753.68; amount received from contingent fund, $83,711.44; amount received from county school fund, $21,305.10; amount received from State school fund, $224,772.77; amount received from site and building fund, $57,180.68; amount received from library fund, $1,187.95; amount received from sale of bonds, $86,717.24; amount received from other sources, $91,-734,71. Total, $1,378,283.08.

EXPENDITURES.—Amount paid for teachers' wages, $743,578.08; amount paid to superintendents of graded schools, $8,191.12; amount paid for rents, fuel and incidentals, $206,519.84; amount paid for text-books, $7,336.19; amount paid for library, $2,-342.88; amount paid for maps and apparatus, $10,700.36; amount paid for sites, buildings and furniture, $186,970.33. Total, $1,165,638.80,—leaving a balance in the hands of district treasurers, July 31st, 1876, of $213,592.61.

NORMAL SCHOOLS.

No reports have come to hand of these institutions, and nothing can be said of their condition more than that the preceding Legislature refused to make the necessary appropriation for their continuance after the close of the last school year.

I esteem this subject one of paramount importance in connection with your public school system. The training of teachers is to common schools what seed-time is to harvest. You cannot reap where you have not sown.

Adequate appropriations should be made to revive these schools, but so guarded as to make it impossible for them to be dwarfed into primary schools on the one hand, or into classical institutions on the other. They should admit only such students as have already the necessary education for teaching, who should there receive the *training* necessary to make such education of the greatest practical value in the profession of teaching. Instruction in the art of teaching is the admitted purpose of these schools. Let them be held to a fulfillment of such obligation.

UNIVERSITY AND AGRICULTURAL COLLEGE.

The Unversity and Agricultural College are each giving promise of accomplishing that which will give renown to the State, if sustained by wise and prudent aid and sympathy. They represent the whole round of professional and technical education, and so long as this class of training is held to be a legitimate tax upon the public, it is your duty to do all that is needful to perpetuate and perfect them.

PUBLIC LANDS.

I have had under advisement the condition of your school lands and of Agricultural College lands, complicated by a decision of the State Supreme Court, declaring them taxable from date of sale contract, with the purpose of laying before you the facts with recommendations. Time does not admit of such presentation at this time. It will be brought to your notice in a special communication at an early day.

PROTECTION OF SECURITIES.

The possibility of trouble and loss by reason of theft of securities, held by the State or any of its institutions, should be provided against at once. The negotiable character of securities held by the Treasurer creates the necessity for the enormous bond of nearly two millions of dollars, now required of him. Make it impossible for those securities to be negotiated, and the temptation for their embezzlement or theft will cease to exist.

This can be accomplished by a law requiring each bond to be endorsed with a caution notice, written or printed thereon, and signed by the proper officer, to the effect that the bond is the property of the State, and is rendered non-negotiable by the act requiring such notice, and referring to the statute. I think it will be found that no man could sustain the claim of an innocent holder of a bond thus endorsed. The law should require the Treasurer of the State Agricultural College and all other custodians of State securities to comply at once with the provisions of such act.

The method suggested by the Governor, of making securities doubly sure, is effective and easily executed; and no parties will more gladly welcome so sensible a mode of lessening their risks than the Treasurers concerned. The Treasurer of the Agricultural College has given one of the best bonds that can be furnished, in the sum of $250,000. The securities in his hands amount to $159,000, by far the greater part of which are school bonds. These bonds are bought directly from the districts, and are made on a blank prepared a long while ago by the Treasurer, which makes both bond and interest payable to the Agricultural College, and renders it non-negotiable. Whether such a law be passed or not, the method will be adopted by the Treasurer of the College.

THE INDUSTRIALIST.

SATURDAY, JANUARY 20, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

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Going West..... 5:46 P. M.

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Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER, Agent.

Number of students enrolled this term, **161.**

We greatly regret to learn that Mrs. Werden's father is dangerously and hopelessly ill.

Visitors are always welcome at the College, and are hereby invited to go wherever they please.

On comparing notes Tuesday morning, the boys found that they averaged about three frozen ears apiece.

Why don't the students keep their column full every week? Write up your locals, boil them down, and send them in.

Since our last report, Ira H. Lewis, Chetopa, Labette county, and Joseph Weeks, Phillipsburgh, Phillips county, have been enrolled.

The carpenter shop is kept very busy these days in finishing up odds and ends of one sort and another required by the various departments.

A temperance meeting at the Presbyterian church last Sunday evening was largely attended. The two subjects of temperance and sabbath-breaking were well aired.

The weather, this week, like verbs, has been regular, irregular and defective; that is, regular in its irregularity and defective in the quality of being comfortable to anything except seals or polar bears.

Gov. Salter and Mr. Stahl, of Neosho county, made a hurried visit to the College the other day. Glad to see them, and wish that all the legislators would come up and look at things for themselves.

The students whom the last number of the INDUSTRIALIST left "leaning against the chapel wall," on account of the scarcity of seats, are now happily relieved from that duty by the introduction of new benches.

Mr. Edward Sikes, of San Francisco, Cal., brother-in-law of Mr. George A. Gale, spent a few days in Manhattan this week. Mr. Sikes is now in Vienna visiting his parents, whom he has hardly seen for ten years. He says California beats the world.

The largest class of the College now is that in Physics, which numbers about seventy-five members. Notwithstanding its unwieldy size, it is well handled by Prof. Kedzie, and the scholars report themselves well pleased with both the Professor and the study.

The most disagreeable day of the season was perpetrated last Monday. Some of the lady students, permitted to get to the College in the morning, were unable to return home at noon, and obliged to spend the night with some neighbors. The thermometer on Tuesday morning indicated ten degrees below zero.

Prof. Kedzie will lecture before the Webster Society next Thursday evening, at the Presbyterian church. Subject, "Student life in German Universities." Those who have heard the Professor's previous lectures will need no urging to induce them to attend. Prof. Platt with his singing class will be in attendance. Exercises will begin at half-past seven. Everybody is invited.

Laboratory Notes.

The following special courses will be in progress in the Chemical Laboratory during this term: Pharmacy, Photography, and Blow-pipe Analysis. Students desiring to pursue a course in any one of these branches may report the present week.

The Chemical Department is under many obligations to the generosity of Mr. L. W. Patterson, of Colorado, for a number of fine specimens of the silver ores of the San Juan region, where he is the owner of extensive mining interests. Mr. Patterson was for some years one of the Territorial Assayers of Colorado, and is a gentleman of much experience and good judgment in mining matters.

The series of meteorological observations which have as usual been in progress the past year, under the charge of the Chemical Department, have furnished some very interesting results for the climatology of the year 1876 just completed. The past year was a cold one, having a mean temperature of 51°.71, which is 1°.73 below the average annual temperature of this place for the past fourteen years. Only one colder year is on record — that of 1869 — which had an average temperature of 49°.44. The year of 1876 was also one of remarkable rainfall, the deposit for the year being 41.94 inches. This is the heaviest rainfall ever before recorded at this place; and is 14.32 inches above the average annual rainfall for fourteen years.

Students' Column.

S. C. Shuemaker, formerly a student of this College, started for the East about the first of last November, and spent nine days at the Centennial Exposition, two at Niagara Falls, and two in New York City. He then went to Poughkeepsie, where he is now attending College. He gives a glowing account of the institution, and the way in which it is conducted; he also speaks of there being a great many young ladies in the College. We are not at all surprised to hear him speak of that subject, as his mind always was inclined to wander in that direction. D.

The meeting of the Websters last Saturday evening was unusually interesting. The first order, inauguration of officers, was attended to, after which came debate. This was on the question, "*Resolved*, That our nation's shame is greater than her honor." We were particularly pleased with the speech of Mr. Williamson for the negative. His arguments were strong and were clearly and concisely set forth. The decision was given for the negative.

The order of extemporaneous speaking was, in our estimation, the best part of the meeting, the speakers displaying their wit, wisdom and ignorance in a way surprisingly interesting.

A committee reported success in obtaining a lecture from Prof. Kedzie, which will probably be delivered in the Presbyterian church on the evening of the 26th. More extended and definite notice is given elsewhere. REPORTER.

ADVICE TO STUDENTS.

If you would be a creature worthy of the name of man, observe the following rules:

1. Stay at College. If you havn't even half enough money to pay expenses, stay. Sponging is a part of a successful man's education; and if you would be an agreeable student, learn it at once.

2. Pay your board bill as long as your money lasts, but don't tell any one that you don't expect some from home.

3. Don't buy any books. You can borrow books from the old students. Most of them have worked their way through and can well afford to furnish you with text-books.

4. As for pencils and scratch paper, you can, by borrowing from different ones, and gathering up here and there, obtain all you need.

5. There are many little articles which you must learn to do without, such as comb and brush, razor, tooth-picks, etc. By exercising a little cheek, you can always get the use of somebody's else. As to a pocket-knife, no gentleman or lady would carry such a thing.

6. There will be good opportunities to earn all the money you need, but above all things don't work.

By a strict observance of the above you will gain popularity. Never mind Horace Greeley's advice; you are already in the "west." What you want now is cheek, "young man," cheek. LOAFER.

[Continued from first page.

an average term of about five months, in fragmentary periods. The fact that these figures are not very materially advanced is peculiarly suggestive of certain permanent conditions of country life. Teaching in such communities, left to the control of these conditions, must be inefficient, sluggish and narrow, never rising above the vigor and individuality of the neighborhood.

A system of education that subjects the youth of the State to such inequality is not worthy to be called free. Education cannot be equalized until the State shall put the schools beyond the retarding influence of locality. In response to this necessity have come laws looking to compulsory attendance; establishing a minimum length of term; empowering examining boards to require certain standard of scholarship for teachers; — all having for their immediate object the increase and regularity of school terms. In the length of school terms, much-derided New Jersey now takes the lead, with the requirement that her schools shall be open nine months per year; and much-lauded Kansas is far behind, with the simple provision that no district shall draw State funds unless supporting a school three months annually.

There are but two possible solutions of the question of securing efficient teachers. They are:

1. To make teaching a paying employment.

2. To provide free training for persons preparing for the work.

School work in cities and large towns is well done, because it is paid for. It is work that affords prospect of continuous employment year by year, at wages that warrant preparation and secure competition. Our city public schools are the best schools of their grade in the land. To make the work of teaching in the country schools permanent and paying — to make it an avocation by which one can gain his support — would require provisions by the laws of the State:

1. Establishing rates of pay for each grade of school in the State.

2. Requiring a minimum length of school term, not less than eight months per year.

3. Supplementing the local taxation, when the full rate required by law has been levied, by stating the amount of State aid necessary to support the school.

[Concluded next week.]

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

Press, Girard. Established 1869. Official paper of county and city. Republican in politics. Wasser & Riddle, Editors and Proprietors. 22-3m.

News, Peru. F. G. Moore & Co., Publishers and Proprietors. $1.50 per year. A newsy sheet published in the interests of Chautauqua county. 22-3m

Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-3m

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Expositor. Concordia. Only home paper in county. Large circulation. Large patronage. Independent. $1.00 a year. J. S. Paradis, Editor and Proprietor. 33

News, Girard, Crawford coumty. A Democratic weekly paper published at the county seat of Crawford county, $1.50 per year. Tipton & Lamoreaux, Editors.

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Kansas Star. A weekly paper published every Saturday at the Kansas Institution for the Deaf and Dumb. Subscription price, fifty cents per year, payable in advance. Address all communications to E. W. Bowles, Olathe, Kas.

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, JANUARY 27, 1877. No. 41.

THE INDUSTRIALIST.
Published every Saturday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

An Address.

[Delivered before the Kansas State Teachers' Association, by Prof. H. C. Speer, President, at an adjourned meeting held in Topeka, December 26th, 27th and 28th, 1876.]

[Concluded from last week.]

If the schools of Kansas were required by law to be kept open nine months annually, even at the rates of pay now obtained, the teaching would be one hundred per cent better; and if for such a term the monthly salary were fixed at an average of fifty dollars a month, there would be no lack of training schools and institutes crowded with students preparing at private expense for the work of teaching.

The normal school question, under such a law, would be superseded by the inevitable competition that would secure the rapid progress in qualification and in succces now seen in our towns and cities. Under such a system, we should have, instead of *district* schools, *public* schools,— schools designed for the children of the State, everywhere kept up to the standard required by the intelligence of a public, instead of schools whose excellence is strictly limited by the enterprise and means of weak districts. But the school laws of Kansas are permissive in these respects. Our district schools represent, not the ambition and power of the State, but the aspiration and ability of the neighborhood, left to struggle for education as for food, or raiment, or shelter. It is, therefore, unequal in benefit and irregular in management, commanding in few places the services of trained teachers and nowhere offering inducements sufficient to hold persons in the work for life. One-third of our teachers leave the work every year; every year one-third are beginners, not one per cent of whom have had any training as teachers.

Failing the enactment of laws that will place these schools firmly on the basis of State schools, lifting them above the hard conditions of locality and making the teacher's work a *business*, then the State must take such teaching force as offers itself, and provide for free training as the only means of elevating the schools.

From this necessity has sprung the county institute, the teachers' association, the normal institute, the normal school,— agencies yet in the infancy of their power. Under our present system of school laws, these are the only aids to progress. The average school district to-day is not stronger than it was ten years ago; and compensation is too meager to excite competition or warrant preparation. Hence the necessity that these agencies be wide and far reaching in their scope, and perfectly free of access.

OBJECT OF FREE NORMAL SCHOOLS.

The immediate aim of this training being to improve the teaching in the great body of the common schools, it is manifestly unwise for the State to establish a system of free training schools that looks to the expenditure of special energy in providing teachers for the towns or for schools of high grade. The object should be to provide better teachers for the country schools. There is no considerable town in Kansas that would not have as good schools were there no normal school for ten years to come. They can get good teaching because they can pay for it. There is no city in the Union that attempts to educate principals, or to supply high school teachers from a normal school. These positions are the substantial prizes of the profession, and the incentive to preparation lies in their value. There is, therefore, at present, no call for the existence of any normal school of high grade in this State. There is demand for help in the district school, and to meet this demand should be the aim of every agency of training adopted by the State.

COURSE OF STUDY.

What instruction should be given in these schools? Evidently, if the scope outlined in this paper be accepted as the true one for normal schools in Kansas, the course of study should be limited by law to definite work, and should include:

1. Thorough reviews of the branches required to be taught in district schools.

2. Instruction in, say, vocal music, industrial drawing, constitution and history of the U. S., the elements of the natural sciences, and English literature and composition.

3. Professional instruction and drill in teaching.

Such a course should not cover a period of more than two years. Teachers for the schools of Boston, St. Louis, Cincinnati, and Chicago, are prepared in a two years' course, including no more studies than I have mentioned. Our schemes of normal work have been too high. If *one-half* the the teachers of Kansas were as competent as would be the students that have attended a *ten months'* course of normal training, our schools would be one hundred per cent better to-day.

We have had enough of this profound talk of the higher as the underpinning of the lower, of these great "efforts worthy of the cause." Let us have some theories worthy of the circumstances, some plans to meet the emergency, some work adapted to things as they are. The first need of common schools to-day is better teaching, not a more extended course; better English, not more natural science; better reading, not more geography; better spelling, not more ologies. We need schools that send out pupils with certain definite acquirements, instead of pupils that have made many beginnings. Instead of lamenting that there are few country schools in which algebra, and philosophy, and a dozen other "advanced" studies are taught, it is time to face the fact that there are few such schools that teach well what the law requires. Instead of arithmetic, and geography, and grammar, run wild in our common schools, we have smattering run wild. What we need is thoroughness first, extension afterward.

What are the means by which the State can fit the greatest number of persons for the work of instruction in the district schools, at a reasonable cost? This is the question of the hour. The schools established for this purpose have been condemned as too expensive, and as failing to give desirable results. The simple facts concerning normal school work in Kansas, as they appear to the tax-payer, are (1) that the graduates have, as a rule, been absorbed by the city and town schools, the strongest communities; (2) that the whole number of students in attendance even three months — and these are the real normal school influence on the country schools — has been but a minute fraction of the number required to supply vacancies. The lack of an over-crowding attendance at our normal schools shows conclusively that the real difficulty in this question has not been overcome. The fact that no considerable number of young persons are preparing themselves at these schools, leaves no escape from the inference that the State of Kansas has offered no adequate inducement for such preparation. If the State would have students accept even a free training for the work of teaching, it must make the offer in such form and under such conditions as will make its acceptance possible. What are these conditions?

1. The training demanded before normal students are licensed to teach in the common schools must be limited by the prime fact that the wages offered in those schools will not warrant the expenditure of time and money in a long course of preparation, even to a free normal school. The class of persons that look to teaching in the district schools as a means of living are, as a rule, poor; those who are well-to-do finding employment more profitable, if not always more to their tastes. For many years to come common school teaching will be too poorly paid to attract many from any but the poorer classes. The average man is neither an enthusiast nor a missionary. The lowest possible standard of acquirement, academic and professional, consistent *with better teaching than we have*, should mark the beginning of this normal work. The advances will be made with the march of improvement in the schools, the normal schools being the elevating influence.

2. The normal training schools of the State must be widely distributed. The attendance at every normal school in the United States is overwhelmingly local. This fact must be accounted for by a general cause. Whatever that cause is, it explodes the idea of centralizing the normal school work of the State. One State University is enough; one normal school is not enough,— two, three, four are not enough. The State must look to the organization of a system of training schools that will ultimately reach all localities. Distribution of normal schools and short courses of training for the license

[Concluded on fourth page.]

THE INDUSTRIALIST.

SATURDAY, JANUARY 27, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Woman's Education.

The world is so full of genuine women, guided by the noblest principles, and evincing an almost desperate eagerness to earn an honorable living for themselves, parents or little ones, that the necessity for an education different in this respect from that usually given to girls must be apparent to all. If viewed from the standpoint of actual instead of ideal life, the course of study followed in the average female seminary will logically appear as a standing wonder. It has been so long in use that the principle upon which it was built, and the end it was designed to attain, may fairly be inferred from the results actually produced. Apart from an effort to discipline the mind, which can be as well done by the acquisition of useful as of useless knowledge, its chief purpose seems to be that of furnishing intelligent playthings for men possessing exhaustless wealth. Judged by its fruits, it evidently assumes that a woman's work mainly consists in discussing literature, smattering French, executing operettas, and attempting to copy paintings without a knowledge of drawing.

This course of study assumes that the girl will not marry; or, if she does, that the strain of maternity will not test her constitution; that her children will never be sick; that her family will be oblivious to bad bread, worse coffee, and household confusion; that a flowerless garden will fill her husband with bliss, and a buttonless shirt with ecstacy; and, above all, that she will never, through any adversities, or under any conceivable circumstances, be required to perform any possible kind of work! The world for which it prepares her is Dreamland, where the poetic Charles Augustus awaits her arrival that they may sail in a fairy ship over a placid ocean to his castle in Spain, and spend a perpetual youth in delicious wooing, while the ceaseless moonlight sifts through overhanging leaves and exotic flowers perfume the air. Charles Augustus is a fraud! His true name is John Smith. He lives in Kansas and earns every cent by hard labor. He tears his clothes, snores, and eats unlimited quantities of pork and cabbage, which Mrs. John Smith may have to cook, and, at the same time, preserve order among an assorted lot of little Smiths, energetic with mischief and having capacious lungs and elastic stomachs.

It is not strange that the seminaries provide the usual course of study, for, like other merchants, they only supply the article demanded by the market. But it is strange that a mother who was herself so educated, and who, as a wife and house-keeper, has keenly felt her own ignorance of subjects that should have been taught, and her want of skill that might have been acquired, can be content to give her daughter the same unreal preparation for that which she knows to be very real life. And it is exceedingly strange that fathers, long familiar with the distress suddenly wrought by financial changes, should religiously exclude from the daughter's education all knowledge of business, and every possibility of earning a woman's living except by the wash-tub, needle or piano.

Remarkable Triumphs.

The Centennial Exhibition has, we think, taught Americans many things concerning foreign countries and their products which they did not know before, and probably would not have known for years. It is also certain that this exhibition was in many respects an astounding revelation to foreigners. One of the English judges, on his return home, informed the cutlery manufacturers of his country that the American products equalled theirs in all respects; an English Commissioner frankly stated that American manufacturers had outstripped the Europeans in the beauty, finish and excellence of the papers they produced. The remarkable statement of a distinguished Swiss Commissioner, concerning American watches, has already been widely published. The Swiss *Times* declares that a company has been formed in Neuchatel, with one hundred thousand dollars capital, "to introduce the American system of watch-making into Switzerland," which until now has provided the world with watches.

The French *Revue des Deux Mondes* contains an interesting article by M. Simonin, who spent two months in observations of the Philadelphia Exhibition, in which he gives his impressions. His point of view is, of course, foreign, but he admits that the Americans have been continually "wresting the methods and skilled processes" of Frenchmen, and that in the manufacture of carriages, fine cabinet work, porcelain, glass and crystal ware, we are "on an equality with France and other great nations." In some other manufactures, he says, we are in advance of France, and notably so in steam engines, locomotives, railroad passenger cars, and agricultural implements.

When the English acknowledge that the Americans excel their own artisans in the production of fine cutlery and papers; when the Swiss come to America to learn improved systems of watch-making; and when the French frankly declare that the Americans are on an equality with France and other great nations in the manufacture of carriages, fine cabinet work, porcelain, glass and crystal ware, and in advance of France and other nations in steam engines, locomotives, railway cars and agricultural machinery,—surely it is time to conclude that this country has made, and is making, astounding progress in the mechanical arts.

The Centennial Exhibition was a brilliant triumph for America in more ways than one. It was the most interesting and successful International Exhibition ever held, and it demonstrated to the world the fact that American genius has conquered a wide domain in the arts and sciences. In a dozen fields where foreign nations had heretofore been conceded pre-eminence, they themselves honestly and frankly declared that their productions were either fairly equalled or surpassed by those of American workmen.—[Atchison Champion.

Mistake Often Made.

Boys and young men sometimes start out in life with the idea that one's success depends on sharpness and chicanery. They imagine if a man is able to always "get the best of a bargain," no matter by what deceits and meanness he carries his point, that his prosperity is assured. This is a great mistake. Enduring prosperity cannot be founded on cunning and dishonesty. The tricky and deceitful man is sure to fall a victim, soon or late, to the influences which are forever working against him. "His house is built upon the sand," and its foundation will be certain to give way. Young people cannot give these truths too much weight. The future of that young man is safe who eschews every phase of double dealing and dishonesty, and lays the foundation of his career in enduring principles of everlasting truth.

To young men who sit around waiting for "something to turn up," we would recall the fact that most persons of note and real worth in this country have been those who fought their way to position through poverty, obscurity, and many adverse circumstances. Vanderbilt began as a boatman; Stewart, as a petty retail merchant; Thomas Scott was at first a fireman and a coal-heaver; Stephen Girard, a cabin-boy; Horace Greeley went to New York an unprepossessing job printer; Elias Howe nearly starved to perfect his sewing machine; Anna Dickinson scrubbed door-steps early in life. We might extend the list indefinitely. Almost everybody "that is any body" gained his crown by absolute grit and grace.

Take Care of Farm Machinery.

It would surprise any one, on driving through the country, to see the amount of farm machinery that is lying out exposed to the weather. Men who have bought machinery on time, and complain of high interest, leave it out all winter and it is damaged many times the amount of interest they pay. We drive up to the residence of a farmer who has the reputation of being a good one. In one place we see a header that cost three or four hundred dollars, in another place a mowing machine, in another place drills and plows, and so all around, his farm machinery is lying out exposed to the weather. Some farmers have at least a thousand dollars' worth of machinery scattered around that between now and the time it will again be used will be damaged two hundred dollars. A good shed could be built for one hundred dollars, and at the end of the year the farmer would not only have his machinery in good condition, but would still have his shed. Some claim they are not able to build this year but will next. Those who cannot build can protect their machinery with straw at no cost and a very little labor. Of course, if straw is used to protect machinery, extra care must taken to guard against fire. It must be far enough away from the house so that sparks cannot set fire to the straw, and thoroughly protected from prairie fires. The farmers of our county lose more every year by carelessness than is paid in interest on every mortgage in the county. We cannot urge too strongly upon farmers the necessity of taking good care of their machinery and in guarding against prairie fires.—[Abilene Chronicle.

THE INDUSTRIALIST.

SATURDAY, JANUARY 27, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

Number of students enrolled this term, **164.**

Yesterday was examination day. How time flies,—or is it we who are passing away?

Absence and sickness of editors is our apology for the scarcity of editorials this week.

Prof. Gale has been quite sick this week, but we are glad to report that he is convalescent.

Quite a rivalry seems to be springing up among the students in the business of visiting cards.

The first monthly examination of the term gave the students a general shaking up last Friday.

The Bluemont Farmer's Club is arranging for a Farmer's Institute this winter, to be held in Manhattan.

President and Professors all very busy this week, consequently less "brains" to the square inch in this issue.

And still they come. New students every day, notwithstanding the cold weather and the Senatorial election.

The class in Inorganic Chemistry finished its lectures last week, and is now engaged in analysis in the laboratory.

The new seats in the chapel have been numbered, and on Monday morning each student took his or her assigned seat.

The ladies hold a prayer meeting on Thursdays, at the close of the fifth hour. We understand the attendance is good.

The class in Political Economy finish their text-book this week, and, after a review next month, will take up U. S. Constitution.

The very cold weather of last week kept the janitor more than busy carrying wood and coal, but now he begins to smile again.

And now the singing in chapel is accompanied by an organ lately procured by the singing class and the "powers that be" combined.

Frank Miller, one of our students, has lost a valuable shirt-stud. Any one finding the same will confer a favor upon the above-named by returning it.

Students enrolled during past week: Amelia M. Noyes, Wabaunsee, Wabaunsee county; Wm. A. Knipe, Manhattan, Riley county; A. N. Godfrey, Madison, Greenwood county.

W. C. Stewart has made several very valuable improvements in his department since taking it in charge, but the last and best is in procuring a wife who now shares the work of instruction with him.

Rev. D. J. Holmes, of Topeka, will lecture at the Methodist church next Monday and Tuesday evenings. Subjects, "Wild Oats," "Marriages, Happy and Unhappy." Admission each evening, 25 cents; students half price. Tickets for sale at this office.

The Alpha Beta Society is preparing another entertainment. It will probably be played in Peak's Hall, Thursday evening, Feb. 22d,—Washington's birthday. The Manhattan public need no urging to cause them to attend the exhibitions which this Society gives.

Last Wednesday, while Prof. Ward was deep in logarithms, sines, etc., of the Trigonometry class, he was interrupted by the report that his horses had broken loose and run away. On going out he found that they had been caught near the Horticultural building. The buggy and harness were somewhat injured, and the horses considerably frightened; but in our humble opinion the Professor has reason to rejoice that the affair terminated so fortunately.

S. E. McNair returned to his home in Wabaunsee county on Wednesday. He is just recovering from an attack of pneumonia. During his illness several of his fellow-students—members of the Young People's Christian Union—took turns in watching with him and in other ways contributing to his relief. It is not expected that a student will be sick when here, but in case he is it is worth something to his friends to feel that he is among those who will care for him.

The following are the offices and calls on the telegraph line for the present term:

Lewis	K.
Delahay	CD.
Wood	DO.
Hughes	H.
Wilson	WI.
Platt	RK.
President's House	A.
Barn	CA.
Mechanical Building	F.
Humphrey	HU.
Peckham	P.
Superintendent's Office	WS.
Blain	B.
Post-Office	PO.
Kansas Pacific Depot	MN.
G. C. Wilder's House	BN.
Pillsbury's House	PR.

As soon as weather will permit, four more offices will be established.

The lecture by Prof. Kedzie Thursday evening was a rare treat. All who have listened to the Professor are acquainted with his easy, pleasant style of speaking. This, together with a thorough knowledge of the subject and of the scenes which he described, combined to chain the attention of the listener from beginning to end. The Professor imagined that himself and listeners were to take a two years' course in Heidelberg University. He described the journey there, picturing the beauties of Rhine scenery, and also giving a life-like description of Heidelberg. He gave a glimpse of the students' rooms and a full description of the lights and shades of their lives.

The music by Prof. Platt's singing class was very fine, especially the quartette, "A Sleigh Ride," rendered by Miss Cassie Moore, Miss Emma Eckman, and Messrs. Williamson and Leasure. We don't blame the Professor for feeling proud of his class, and we hope to hear it again.

The evening was very profitably spent, and the citizens of Manhattan are greatly indebted to the Webster Society for the profit and pleasure of so rich an entertainment.

The meeting of the Websters last Saturday night was a remarkably pleasant one. The debate was postponed for lack of speakers.

Under extemporaneous speaking the members entered into a spirited debate on the merits of this Institution. We will not try to give any of the arguments or assertions, suffice it to say that both sides were well balanced and sustained.

Under new business it was decided to circulate a paper among the members, requesting them to contribute books to the library. REPORTER.

The Alpha Betas, at their meeting on the 19th, discussed the question: "Should religion be taught in the public schools?" The judges decided that the speakers of the negative did the better.

Under extemporaneous speaking considerable excitement was manifested, just enough to cause a desire for sport; so, under miscellaneous business, an attempt was made to impose upon the Marshal, but he was not caught napping, and the way constitutions and by-laws were called into requisition would have done credit to a newly-fledged "sprig of the bar." But the Marshal was out-generaled at last. After adjournment, the combatants had a laugh all to themselves, and, judging from the smiling countenances that left the hall, all felt paid for attending. ATEB.

[Concluded from first page.]

to teach in country schools, are the conditions that will secure a general attendance of persons desiring to enter the work of teaching, and will thus exert a vast influence for good in all sections.

3. The State can not sustain many such free training schools unless they be cheap schools; and, since their benefits as well as their attendance are largely local, part of the burden of their support must properly rest upon the localities in which they are situated. While it is true that the graduates of such schools are generally called to different parts of the State,— and in this respect the normal schools are State-wide in influence — it is also true that those who attend for only short intervals are in merely local demand and of local benefit. It is evidently the true policy of the State to require as much aid from localities as will not become burdensome,— in buildings, in furniture, in instruction.

The work of a normal school may be said to consist in three things:

1. Giving academic instruction in the branches required in schools licentiates may teach, and in related branches.

2. Giving professional instruction in the theory of education.

3. Giving special instruction in the art of teaching, as applied to the several branches.

The academic work may be done as well in any other school. The professional work included under the second and third heads, requires special teaching and model schools.

It seems to me that a comprehensive plan of normal training by the State should meet these conditions: The course must be short; the schools must be widely distributed; localities must have large interest in their support and efficiency. Such a plan might ultimately use all these agencies:

I. The normal department in connection with the State University.

II. State normal schools in several sections of the State, organized under a law providing for uniformity of management, limiting the course of training, and limiting the expenses paid by the State to the *cost of instruction*,— not exceeding, say, four thousand dollars. In these schools, all other expenses — the buildings and furniture, the fuel, janitor and apparatus — should be borne by the districts or counties in which they are located.

III. Normal departments in cities or towns that comply with conditions prescribed by law: (1.) The city to have in satisfactory operation a high school such as may be required by statute, giving instruction in the branches of study required in the State normal schools; to furnish all necessary rooms, properly heated and provided with apparatus, for the use of normal classes; to teach, free of tuition, all the academic branches required for the normal classes (except the common branches); to keep its graded schools in session ten months in a year, as training schools for the normal department. (2.) The State to appoint the teachers of the normal department, not exceeding one for each fifty pupils; to examine the graduating classes, and grant diplomas, through its State Board of Education.

IV. State certificates and diplomas should be issued representing several stages of acquirement by normal students: Six months' training, with certain acquirements, might be represented by a State certificate for two years for ungraded schools; one year's training, with certain acquirements, by a State certificate for three years for the next higher class of schools; two years' training, or full course, by the diploma of the State,

V. A system of county normal institutes, to be supported by the counties.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

Press, Girard. Established 1869. Official paper of county and city. Republican in politics. Wasser & Riddle, Editors and Proprietors. 22-3m.

News, Peru. F. G. Moore & Co., Publishers and Proprietors. $1.50 per year. A newsy sheet published in the interests of Chautauqua county. 22-3m

Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-3m

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Expositor. Concordia. Only home paper in county. Large circulation. Large patronage. Independent. $1.00 a year. J. S. Paradis, Editor and Proprietor. 33

News, Girard, Crawford coumty. A Democratic weekly paper published at the county seat of Crawford county, $1.50 per year. Tipton & Lamoreaux, Editors.

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Kansas Star. A weekly paper published every Saturday at the Kansas Institution for the Deaf and Dumb. Subscription price, fifty cents per year, payable in advance. Address all communications to E. W. Bowles, Olathe, Kas.

Press. Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, FEBRUARY 3, 1877. No. 42.

THE INDUSTRIALIST.
Published every Saturday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Regent's Report.

To his Excellency THOS. A. OSBORN, *Governor of the State of Kansas:*

DEAR SIR:—The Regents of the Kansas State Agricultural College respectfully submit the following report and accompanying documents for the fiscal year ending November 30, 1876.

STUDENTS.

During the calendar year 1876, three hundred and three (303) students have been enrolled, being the largest number ever received, and an increase over the attendance of the previous year of twenty-eight per cent. Sixty-one per cent were males and thirty-nine per cent were females. Fifty-three counties or States were represented.

FACULTY.

The chairs of Botany and Practical Horticulture have been consolidated, and Prof. C. V. Riley has been engaged as Lecturer on Practical Entomology. The first course upon this important branch of agricultural science was delivered by this eminent entomologist during the present term, and has proven to be of great service. The Hon. D. J. Brewer, Associate Justice of the Supreme Court of the State of Kansas, will continue his invaluable lectures on Practical Law, during the coming term. We regard ourselves as exceedingly fortunate in securing the services of gentlemen having such ability and rare reputation in these respective professions. The Faculty is as follows: (See advertisement.)

APPROPRIATIONS.

The last Legislature made appropriations for this institution as follows:

For material and equipment of chemical department	$ 500
For fencing	500
For seeds and experiments	200
For printing department	200
For woman's industrial departments	500
For two privies	300
For moving blacksmith shop	100
For finishing college, mechanical building	1,000
For laboratory building	8,000
For horticultural and botanical building	4,000
Total	$15,300

These sums have been duly expended. The Laboratory is a stone building, pointed range work, one story, cross-form, 109x109 feet, fitted with working tables, an effective water and drainage system, and is well ventilated and heated. It is admirably designed, and furnishes more room and better laboratorial facilities than any building of its cost in the United States. The Horticultural building is equally well adapted to the wants of the departments of Botany and Practical Horticulture. It is of the same description of stone-work, one story, 31x80 feet, having a basement for work-shops and cellars. These buildings have not only been finished, but also equipped for use by the classes, out of their respective appropriations.

The appropriation for finishing the College and Mechanical buildings, has been expended in flooring and ceiling the carpenter shop, in plastering all the rooms in the second story of the Mechanical building, in extending the hall through the College building, and in the erection of storm houses. The sum was not sufficient for completing either building, but has been used in doing the most necessary work on both.

The plans and specifications have been furnished by Mr. E. T. Carr, architect, and the work performed under his direction. We can emphatically repeat the statement in our last report, respecting buildings, that "the State has never obtained more room or better work for the same money." The minor appropriations for the departments named have been properly expended.

FINANCES.

The income of this institution is derived from three sources, namely: the United States, the State, and the Industrial Departments.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which has been sold except the 31,461 acres remaining in the hands of the Land Agent, and offered at an average price of $6.25 per acre. During the year this officer has sold 5,604 acres, at an average price of $5.83 per acre. The proceeds arising from these sales are invested in school bonds or real estate by the Loan Commissioner, who during the year has so placed $63,067.25. The securities in the hands of the Treasurer amount to $159,317.69, and the notes in the hands of the Land Agent to $78,783.59. The interest received from these securities during the year has been $20,490.96, which we are authorized to use for current expenses.

By the acceptance of the Congressional endowment the State agreed that "no portion of said fund, *nor the interest thereon*, shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings." As a college cannot be conducted without necessary buildings and equipments, the State is under contract with the United States Government to furnish them as needed for the best utilization of this magnificent endowment. As already shown, our income from this source amounted to $15,300, and it will be noticed that it has not been used in paying salaries or the current expenses of instruction.

The gross receipts from the Farm, Nursery, Mechanical and other industrial departments have been $4,761.54. So that, excluding the State appropriation, our income has amounted to $25,252.50.

As stated in last report, we entered the year indebted to the Treasurer $3,233.92, and have closed it indebted to him $3,407.14; so that we have exceeded the income but $173.22. With respect to this apparent indebtedness, we would call your attention to the fact that the delinquent interest on securities amounts to $5,929.71. Had this sum been received on maturity, there would be a balance of $2,519.57 in our favor. In other words, the assets of the interest fund exceeds all the liabilities against it by this sum, which we trust will be accepted by the State as a fulfillment of our pledge to conduct this institution on its income.

LIABILITIES.

In 1873 the management and policy of the Agricultural College were entirely changed by the appointment of a new Board of Regents. In 1870 the former Board, under an act approved March 1, 1870, issued certain scrip or "College warrats," in denominations of $100, amounting to $33,700, the last installment of which falls due in 1877. The State has annually provided for the payment of this indebtedness until last year when, although the appropriation was recommended by the joint Ways and Means Committee, the item failed in the House. The amount necessary to redeem the warrants due in 1876, if paid by March 15, 1877, is $6,813.20; amount necessary to pay those coming due in 1877, $4,188.46; total, $11,001.66. An account of this liability can be found in the First Annual Report of the Board of Commissioners on Public Institutions, 1873. With the payment of this debt, for which the present management is in nowise responsible, the last liability against the institution will cease, and no future ones will be contracted.

COLLEGE LANDS.

Some complications have arisen in regard to certain lands sold by the Board of Regents. The Legislature provided in 1866 that the lands granted to the College might be sold on credit, payable in eight equal annual installments, with ten per cent on each installment payable annually, the first installment to be paid at date of purchase, and when the last installment had been paid, the purchaser should be entitled to a patent for the land from the Governor, under seal of the State, which patent should confer upon the grantee a title in fee simple for the land described therein.

The Board of Regents, prior to making any contracts for the sale of these lands, obtained the written opinion of the Attorney-General of the State, that the lands were not taxable until the issuance of a patent by the State authorities. Acting upon the legal authority given by the law officer of the State, and repeated by his several successors, the lands were sold to purchasers with the promise that the same were exempt from taxation until the last installmeet of the purchase money was paid and a patent issued therefor.

In many counties these lands were, however, assessed and placed on the tax rolls, as other lands taxable in the county; but the College authorities and purchasers, relying upon the legal opinions of the several Attorney-Generals of the State, treated such assessments as illegal and void.

[Concluded on fourth page.]

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 3, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Woman's Education.

It is impossible to determine just what work a given woman will likely be required to do, and, therefore, impossible to decide just what knowledge and skill the girl should most seek. Ordinarily, she will marry; yet, so various are the duties imposed by matrimony that this fact does not settle the question. Some wives are lifted by the husband's wealth above all household care, except that of general superintendence. Others, nobly impelled by love, are from the outset efficient co-laborers in acquiring the common property, his occupation deciding the kind of work performed by her, whether in the kitchen, dairy, office or store. Still others, whose husbands become helpless through sickness, dissipation or chronic worthlessness, are gradually forced to support the family by their own labor. While every person is acquainted with one whose girlhood was spent in luxury, whose education was exquisitely "finished," whose married life was free from all business knowledge or perplexity, suddenly hurled by the husband's death, with a bankrupt estate and a group of nestling children, to battle against the trained cunning and steeled avarice of soulless men for the mere crumb that prevents actual starvation. Without raising the vexed question of woman's rights — whether the family is her proper sphere, or whether it be as broad as her success in professional and political life can make it — she undoubtedly has a right to be educated as a woman. She is not a man any more than a lawyer is a physician, and is as fairly entitled to special instruction as are they.

The girl has a right to an education as precisely adapted to a woman's work as is boy's preparatory to man's work. She has a right to study her own organism and functions, to understand the conditions of health, and to be forewarned against the inexorable penalties of ignorance, folly or over-taxation. She has a right to instruction respecting the proper care of the sick, for a mother's watchfulness and a wife's tenderness, when intelligently directed, are more potent than drugs in the struggle with death. Not that she is to receive the physician's education, for we are not speaking of the physician's work; but a woman's education for that divine work which woman has always performed in every race, and will perform so long as there are moaning children to soothe and fevered brows to cool. She has a right to instruction and practice in the art of cutting and making her own clothing tastefully; in the art of cookery; in that of setting a table, brightening a room, beautifying a garden; in short, to all the knowledge which related sciences can contribute to her intelligence, deftness and efficiency in that greatest and purest of womanly arts, the art of making home brighter to the little ones than streets, more attractive to its adults than saloons — a quiet nook whence the pilgrim of three score and ten boards the ship that sails out into eternity's ocean. These are things which men cannot perform. Since the world began, and because of the division of labor ordained before it began, they have distinctively belonged to woman as woman. Her patent to them is freshly written, generation by generation, in the full promptings of her own nature. Her commission to do them issues from a higher authority than that of fashion, ambitious fancy, or the ignorance induced by a traditional education which has created a greater distaste for home duties than any other one element.

A Farmer's Opinion.

The *Kansas Farmer* has the following letter from one of the members of the State Grange, who, after examining on his own account, came to the conclusions expressed. We havn't the slightest idea who "P. P. W." is:

In answer to several inquiries made since I returned from the State Grange, at Manhattan, as to what I thought of the Agricultural College, and whether I thought it a good school, and "Is it a school that we farmers should support?" I answer most emphatically, yes. I believe it to be *the* place for the education of the laboring classes of Kansas. It certainly should be sustained and supported by the farmers of this State, as their Institution, and if continued as it now seems to be carried on, it will be an honor and a credit to the State in the education of our children in the industrial pursuits; and the time will come when they will look back with pride to it and say, "I was educated at the Agricultural College."

The College is in a flourishing condition. I did not get much acquainted with the teachers, as they were busy, and I wished to see for myself. So took my time to go over the farm, through the Mechanical, Horticultural and Pomological departments (I think I know something about them), and examine carefully, for my own satisfaction, the workings of the same. There seems to be an air of "get up and get" about the whole concern. If there was anything going on around there that the man Anderson didn't know something about, my conclusion was that it wasn't worth knowing. There seems to be some qualifications about this gentleman (who, by the way, is called the President) necessary to make a good, successful farmer; and he would have made his mark in the world if he had chosen agriculture as his pursuit.

In the Farm department, from what I could see, the Regents have made a success in their selection of a Superintendent. As farming is my forte, probably I could take in more of this department than any other. We farmers cannot afford to make experiments in new kinds of grains, seeds, vegetables, etc., at least only in a small way; but the College folks can, and publish in the agricultural papers their success as well as failures, thereby saving hundreds of dollars to the farmers. The farm superintendent is making a start in this way, and I have no doubt but it will result in great good, as he seems to take hold of his work as though he means business. His name is Shelton, and he came from Michigan, but I see no objection to that, as Michigan has some smart folks as well as Indiana.

They need a barn badly on the College farm, and I do hope the Legislature will make an appropriation for that purpose this winter. Let us give them a good send off, set them up well, and then if they don't make a showing we will let some other fellows rent our farm next year.

P. P. W.

Kansas Experiments.

The *American Cultivator* has the following notice of the experiments made on the College farm, which is from the pen of Joseph Harris, author of "Walks and Talks on the Farm," one of the best known and ablest agricultural writers of the nation:

Prof. Shelton, of the Kansas Agricultural College, reports the results of some experiments, made last year on the College farm. The Clawson wheat, which is so popular with us, was entirely ruined by rust, and the Wicks, which also does well with us, gave a very light yield of inferior grain.

White Winter rye gave a large yield of superior grain. Several varieties of foreign oats and barley were tried; none proved valuable except Australian oats, which gave a large yield of plump grain.

Some experiments were made in top-dressing wheat with twenty-eight loads of well rotted manure per acre, and with 160 pounds gypsum per acre. The yield was as follows:—

	Bushels of grain per acre.	Straw per acre.
No manure.....	18.6	3645 lbs.
160 lbs. gypsum per acre	18.5	3587 "
28 loads rotted manure...	17.4	3716 "

The manure was applied Feb. 21. The gypsum was sown April 24.

I should judge that this land is already too rich in organic matter for wheat; and the manure merely gave a slight increase in the growth of straw, and rendered it more liable to injury from rust.

With us here a crop of wheat, of eighteen bushels per acre, would probably not give us over eighty pounds of grain and 1,440 pounds of straw.

It is seldom that we get, with a good crop of wheat, of say thirty-five bushels per acre, over 100 pounds of straw to the bushel. It will be seen that in Kansas there was, without manure, nearly 200 pounds of straw to each bushel of grain, and still more where manure was applied.

In Mr. Lawe's experiments, when wheat was grown year after year on the same land, the plat without manure for twenty years gave an average annual crop of sixteen and one-quarter bushels of grain and 1,693 pounds of straw, which is a little over 100 pounds of straw to each bushel of grain.

The plat which received fourteen tons of manure every year averaged for twenty years thirty-two and one-half bushels of wheat per acre, and 5,591 pounds of straw. During the last twelve years the average yield was thirty-five and one-half bushels of wheat and 6101 pounds of straw.

The twentieth crop in succession on the same land was the best of the whole series;

without manure the crop was seventeen and one-quarter bushels per acre, and 1,600 pounds of straw.

With barn-yard manure (fourteen tons every year for twenty years) the yield the twentieth year was forty-four bushels per acre and 4,729 pounds of straw.

"It would seem from this," said the Deacon "that the Kansas soil does not produce too much straw, but too little grain."

I do not think that this fully explains the matter. Possibly, however, the Deacon is partly right. And I wish Prof. Shelton would take a piece of land that had grown Indian corn for several years, and then prepare it for wheat in the best manner, perhaps by summer-fallowing, and leave some of the land without manure, and put well-rotted rich manure on some plats, and on others, super-phosphate, ashes, lime, salts of ammonia, etc., alone and mixed. He will know what I mean and will see the object. I want to grow the corn to reduce the carbonaceous matter in the soil, and then see if ammonia and phosphates, in rich, well-rotted manure, will not give a large crop of wheat. Of course, a great deal will depend on the season and the mechanical condition of the soil, but I am sure Prof. Shelton will dig out some facts of great scientific and practical value. It does my heart good to think what a number of intelligent, practical men we have engaged in making experiments at the different agricultural colleges. We may not get just what we expect, but we shall get something worth waiting for.

In the meantime, if I had land that would produce eighteen and one-half bushels of wheat per acre, and 200 pounds of straw to the bushel, I would see what it would do in raising corn and mangolds for pigs and sheep.

Prof. Shelton planted corn in hills three and one-half feet apart. The yield was sixty-two and one-half bushels per acre, of seventy-two pounds of ears of corn to the bushel. Corn in *drills*, three and one-half feet apart, and the plants thinned out to about ten inches apart in the rows, so as to leave about as many plants as there were on the land planted in hills, produced seventy-one bushels per acre, or eight and one-half bushels per acre in favor of drilling.

The proportion of stalks to corn is not given. But it is evident that this land which produces only eighteen and one-half bushels of wheat per acre is capable of producing a great yield of produce. We shall know more about these things in a few years. Push on the good work.

Moreton Farm, Rochester, N. Y.

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 3, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

Number of students enrolled this term, **166.**

Prof. Kedzie has divided that unwieldy class in Physics, and now there is trembling in the ranks.

Prof. Platt's singers are canvassing for comic music. Look out for a side-splitting concert one of these days.

During the week Seward N. Peck, of Junction City, Davis county, and Martha Kimble, of Riley county, have been enrolled.

The class in Drawing is now under a new teacher, Mr. John Walters, of Manhattan. He took charge of the class last Thursday.

Report of Alpha Beta Society for last week was minus because of G. H. Failyer's absence from the Hill. Miss Belle Pound is teaching school near Milford. Ahem!

The class in Trigonometry begin field work with the instruments next Monday. The class will be divided into groups and use the instruments on different afternoons.

The grades of the different classes were posted on the doors last Thursday, and point emphatically to the conclusion that nearly all the students have been faithfully at work during the past month.

A church social at Prof. Lee's last Wednesday evening was turned into a surprise pound party, and effectually surprised the Professor and family with a perfect shower of pound packages of various articles.

The subjects of "Wild Oats" and "Happy and Unhappy Marriages," as handled last Monday and Tuesday evenings, by Rev. D. J. Holmes, of Topeka, are highly spoken of by the students who were sensible enough to attend.

Hon. G. Bohrer, Representative from Rice county, will deliver a lecture to the students next Monday morning at the fourth hour. Subject: "The Bee and Bee-keeping." Many years' experience enables Mr. Bohrer to speak with interest and authority upon this important topic.

Among the many endorsements by practical men of the course pursued in this Institution, we find the following statement in a discussion of the Iowa Agricultural College, by Samuel Sinnett, in the *Patron's Helper*. Mr. Sinnett is a leading farmer and writer. The whole article can be found in the last *Kansas Farmer*:

In looking over the course of study, and its practical tendency, that is pursued in the Kansas State Agricultural College, I was much surprised to see how far they have gone ahead of Iowa in giving the students an education that will be both practical and useful in future life.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending February 1st, 1877.

DAY OF WEEK AND MONTH.		Temperature Max.	Min.	Mean.	Bar. Mean	Hi't.	Inches Rainfall
Friday	26	42°	16°	29°.50	29.07		
Saturday	27	50	18	35 .75	29.16		
Sunday	28	53	40	42	29.05		
Monday	29	55	46	51 .25	28.90		
Tuesday	30	53	31	44	28.85		.45
Wednesday	31	64	31	45	28.93		
Thursday	1	59	26	43 .75	28.94		Fog.

Average temperature for the week, 41°.60.
Range of temperature for the week, 48°.
Rainfall for the week, .45.

Students' Column.

Notwithstanding the warm weather, when all feel languid and indisposed to extra exertion, on Friday, the 2d inst., a goodly number of Alpha Betas assembled in their Hall. Messrs. Amos Wilson and Albert Copley were voted members. Messrs. E. C. and R. N. Frizzell, and Miss Nellie Pillsbury were proposed for membership.

Under debate we were treated to the very essence of logic and rhetoric. The question under discussion was something about man's being governed by fear rather than principle. The speakers seemed determined to go to the bottom of the question. Few of us knew we were such contemptible, fawning spaniels before; but so it seems, for the judges gave their decision in favor of the champions of fear.

That janitor business and book committee were brought before us again. Some of the members seem determined to find the fun in that business if there is any there to find.

Extra preparations are being made for debate on next Friday. All are invited.

After transacting other usual business, the Society adjourned. ATEB.

A lively meeting was held by the Websters last Saturday evening. Many sharp eyes were watching for breaches of parliamentary rules, and many members found themselves "picked up."

The decision on the Frederick and Washington question was unanimously for Freddy.

A vote of thanks was tendered to Prof. Kedzie for his lecture, and to Prof. Platt and singing class for the music.

It was decided to spend a small portion of the time of each meeting, hereafter, in reading some works on parliamentary usage and discussing and explaining the same; also, a short time to an exercise in spelling, the reasons for the last decision being substantially that the Society is an organization for general improvement, and that correct spelling is one of the grandest accomplishments that can be acquired.

The question for debate next meeting is, "Resolved, That he does right who does what he believes to be right." REPORTER.

[Concluded from first page.]

The Supreme Court, however, in July, 1875, in the case of *Oswalt vs. Hallowell*, 15 Kas. Rep., 154, decided that the lands thus sold on credit and payable in annual installments, were taxable from date of contract, notwithstanding no patent had issued therefor.

In 1876 the Legislature passed an act authorizing the Regents of the College to use the endowment fund to pay taxes due on lands sold by the College, and to redeem such lands from tax sales. Such act, if carried out, would greatly reduce the endowment fund of the College, in violation of the purpose of the grant of lands by the act of Congress.

In addition to this, it would be a great wrong to the College to compel its funds to be reduced in this manner, when its authorities acted on the legal opinion of the law officers of the State. The State and not the College authorities are responsible for the promise to purchasers, that the lands were not taxable until the issuance of a patent. The State should repair the wrong committed, and not compel the funds of the College to be thus diverted from the purposes intended. The State, in justice and in good faith, is bound by the legal opinions of its law officers. The officers of the College had a right to act upon the legal opinions given them by the Attorney-Generals. Under these circumstances, we suggest that the law authorizing the use of the endowment fund to pay taxes on lands heretofore sold by the College, and to redeem lands from taxes, should be repealed.

Second, That a law should be enacted exempting from taxation all property and lands granted to the Agricultural College, State University and Normal School, until a patent had issued therefor.

Third, That an appropriation should be made out of the funds of the State to pay all the taxes that have accrued on the lands, where sales were made prior to the publica- of the decision of the Supreme Court, and individuals hold tax certificates therefor. And in all cases where such lands have been bid off to the county for taxes, the Legislature should pass an act striking from the tax rolls and records all such lands.

In good faith the State can do nothing less; and if these suggestions are followed, the endowment fund of the College will be fully protected, and all the purchasers of lands who have relied upon the legal opinions of the law officers of the State will be relieved from the hardships under which they now rest by the construction of the Supreme Court, in the case of *Oswalt vs. Hallowell.*

WANTS.

There are two reasons why the essential needs of the Agricultural College should be supplied: First, because it is designed to give and is really giving a practical education for the industrial classes, who compose ninety-seven per cent of the tax-payers of Kansas; second, because the State is in law and honor bound to furnish the buildings and equipment absolutely necessary, both for present use and for making the institution wholly self-supporting. We have six thousand dollars' worth of highly-bred stock and other property, with no protection except that afforded by a shed that cost $173.09; and the need for a stone barn is glaringly imperative. The chapel, and all the classes of the literary department except those in botany and chemistry, are crowded into a two-story building 45x100 feet, erected as one wing of a huge barn. The sons and daughters of the industrialists of Kansas are, to say the least, entitled to as comfortable and respectable accommodations as are those furnished for professioual education. Suitable buildings are imperatively needed. And with respect to equipment, the fact that this is the only one of the State institutions which pays the expenses of instruction from its own income, so far from being a reason why the Legislature should withhold aid, is the best reason in the world why it should give the several departments such facilities as will put them squarely on their feet and render them entirely self-supporting.

After a careful consideration of the imperative necessities of the institution, and after greatly reducing the estimates made by the several departments to the lowest point, we would urgently ask the following appropriations:

FOR THE YEAR 1877.

For the payment of College warrants due in 1876, and accrued interest	$6,813 20
For the payment of College warrants falling due in 1877, and closing out the debt	4,188 46
For the erection of a stone barn for Farm Department	4,000 00
For seeds, experiments, cabinet and equipment for Farm Department	800 00
For green-house, stock, experiments and cabinet for Horticultural Department	1,000 00
For moth-proof cases and cabinet for Entomological Department	750 00
For philosophical and chemical apparatus	750 00
For additional tools and material for Mechanical Department	500 00
For machines and material for Woman's Industrial Department	300 00
For type and material for Printing Department	200 00
For instruments and material for Telegraph Department	150 00
For models, instruments and material for Drawing, Mathematical and English Departments	500 00
For finishing mechanical and college buildings	1,000 00
For sidewalks	750 00
For library	1,000 00
For fire extinguishers	500 00
For insurance	500 00
Total	$23,701 66

FOR THE YEAR 1878.

For Practical Agricultural building	$12,500 00
For seeds, experiments and cabinet, and equipment for Farm Department	500 00
For stock, experiments and cabinet for Horticultural Department	300 00
For moth-proof cases and cabinet for Entomological Department	250 00
For philosophical and chemical apparatus	750 00
For tools and material for Mechanical Department	200 00
For machines and material for Woman's Industrial Department	300 00
For type, material and instruments for Printing and Telegraph Departments	300 00
For equipment and material for Drawing, Mathematical and English Departments	300 00
For Library	1,000 00
For farm house	3,000 00
For insurance	500 00
Total	$19,900 00

All of which is respectfully submitted.

M. J. SALTER, *Chairman.*
N. A. ADAMS, *Secretary.*
JOHN H. FOLKS.
J. LAWRENCE.
B. L. KINGSBURY.
A. H. HORTON.
JOHN A. ANDERSON.

MANHATTAN, KAS., Dec. 16, 1876.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, FEBRUARY 10, 1877. No. 43.

THE INDUSTRIALIST.
Published every Saturday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Extract From Report of Farm Department for the Year 1876.

To the Board of Regents of the Kansas State Agricultural College:

GENTLEMEN: — I have the honor of offering for your consideration the following brief sketch of operations in the Farm Department for the year last past.

During the year covered by this report, the course of instruction given in this department has been substantially the same as that of the year previous, with the exception of such modifications in details, as experience has suggested. I have during this year, in addition to my duties as Farm Superintendent, delivered the regular course of lectures on practical agriculture to two classes, and have taught a large class in physiology. The course of study in physiology does not differ materially from that mentioned in previous reports. The study of physiology in the general course is prefatory to that of the second-year class in practical agriculture. This class in practical agriculture devotes a large portion of one term to the matter of stock breeding, including the principles of breeding and the characteristics of breeds; and experience has taught us that those students who have had the discipline of the course in physiology are peculiarly qualified for the study of stock breeding, which immediately follows it. The elementary course, again, enables the student to take advantageously the advanced course in agriculture, embracing the more complex questions of farm life, as for example, systems of farm management, rotation of crops, agricultural experiments, etc.

During the year a considerable number of students have taken practical agriculture as an "industrial," and it gives me pleasure to be able to testify to the efficiency of these young men as workers. During the college year the entire work of the farm, including the care of a large herd of pure-bred cattle and swine, has been done by the students, with the single exception of the labor of the foreman directing operations; and I unhesitatingly assert that the work thus done has cost the department less money than it would have cost had the work been done by hired men. Agreeably to plans heretofore submitted, it is proposed, during the coming year, to considerably enlarge and systematize student labor upon the College farm.

THE FARM.

The season of 1876 will long be remembered by the husbandmen of these parts as one uniformly favorable to the growth of crops suitable to this latitude; almost opposite in every essential respect to the season of 1875. I have to report equally opposite results for the operations of the farm from those reported one year ago. Instead of light yields and crops, generally cultivated at a loss, we are now embarrassed for storage-room for our grain — the granaries literally bursting with the crops of the season. The difference of results obtained during the seasons 1875–76, show very strikingly, by comparison. Consulting my report for 1875, I find that corn averaged that season 27½ bushels per acre; the present year the crop has averaged 56⅝ bushels. In 1875 wheat averaged 9½ bushels; this year the yield has been 17 3–10 bushels. Barley, in 1875, yielded 13¾ bushels; the yield the present season has been 31½ bushels per acre. For a complete statement of the number of acres cultivated upon the College farm, the yield per acre in bushels and tons of the different crops grown, together with the cost of each bushel and ton, you are respectfully referred to the subjoined table:

Crops grown.	*No. of acres.*	*Yield, per acre.*		*Cost.*	
		Bush.	*Tn*	*Bush.*	*Ton.*
Corn	24	56⅝	.....	12½c.	.....
Wheat (winter)	20	17.3	.....	64c.	.....
Rye	6	18.8	.....	59c.	.....
Oats	10	26.7	.....	24c.	.....
Barley	6½	31½	.....	29½c.	.....
Timothy seed	1½	1⅓	.....	265c.	.....
Mangolds	1¼	420	.....	10½	.....
Timothy hay	10	.....	1	.....	222c.
Millet	9	.....	2½	.....	380c.

The prevailing wet weather of the season has been injurious in some respects. Early in the spring it greatly retarded operations in the field, and later it furnished conditions favorable to rusting the growing grain. The comparatively light yields of oats and wheat are explained by the presence of the rust.

STOCK.— During the year considerable and very valuable additions have been made to the live stock belonging to the department. Within this time, the cow Grace Young 4th has added two fine red heifer calves, and Grace Young 5th one red heifer calf, to our herd of short-horns. These calves are the get of Zenas King 15,801, and are a valuable addition to the herd.

By the advice of your committee, I have recently purchased the short-horn cow Cambridge 18th (Vol. 16, American Herd Book), and her daughter Cambridge 19th (Vol. 16), aged respectively 6 and 4 years. These cows are descendants of imported Cherry Pie, by Lord of the North (11,743), bred by Jonas Webb, Babraham, England. They represent a very choice pedigree, containing some of the very best blood known in short-horn history. Thus Cambridge 18th was got by imported General Napier (26,-239), a Booth bull of the very highest breeding, he being by Lord Blithe (22,126), an own brother of the renowned cow Lady Fragrant. The cow Cambridge 19th again was got by Nimrod (12,499), he being by the famous Booth sire Star of the Realm, 11,021, out of the cow Nannie Williams 10th. Individually and in the matter of pedigree these animals are a great gain to our herd; indeed, they would be considered an acquisition to any herd.

An opportunity offering, the short-horn bull, Zenas King 15,801, originally at the head of our herd, has been sold at a fair price, and his place is now occupied by a very useful, well-bred animal, the 2d Duke of Jubilee 19,498, purchased of Mr. Albert Crane, Durham Park, Marion county, Kansas.

To our stock of swine, two animals only have been added by purchase. These, a boar and a sow, purchased of N. H. Gentry, Sedalia, Mo., have proved useful additions, and given general satisfaction.

Our experience with swine has been entirely satisfactory. Indeed, I hazard nothing in saying that the general farmer will find that at present prices they are the most profitable animals kept on the farm. While nearly all other crops and products of the farm have been slow of sale at very low prices, the demand for pigs has been unlimited. I have been unable to fill half the orders received for pigs for breeding purposes during this year, and within this time have sold breeding animals chiefly of two litters of pigs to the amount of $319.

BUILDINGS AND FENCES.—Beyond moving one corn crib from the upper farm to the lower, and roofing another, and making such changes in a shed now doing duty as a "barn" as were demanded by the increase of our herd, no changes have been made in the buildings of the farm since last year.

The shed now in use is crowded to its utmost capacity, every foot of available space being occupied either by cattle stalls or granaries. This building is 30x80 feet, and now furnishes stall-room, including six boxes for bulls, for 22 head of cattle and 5 horses. I need hardly say that this building is grossly inadequate to the wants of the farm, and that the natural increase of our herd during the coming year will compel a considerable rearrangement of our present quarters, as well as the construction of other sheds. The great want of my department is a comfortable barn, and this not alone for the comfort of the stock and its attendants. During the year I have experimented with grains in considerable variety; these, for the want of barn-room, we were compelled to leave in the field, protected as best we could until they were threshed. In a large majority of the plats the grain was utterly ruined by the prevailing rain storms. I need not multiply instances of this kind, as I might. Whether we consider the farm as an instrument for teaching practical agriculture, as an experimental farm, as a means of introducing better kinds of stock, or simply as a source of profit to the College, it is equally crippled in its usefulness by the want of convenient buildings.

Important additions have been made to the fences of the farm within the year. The lane fence has been completed through the entire farm, and the southern half of the farm subdivided into fields. All told, 360 rods of new board fence, with posts 8 feet apart and

[Continued on fourth page.]

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 10, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Photography as a Woman's Art.

Just at the present juncture of events, when all interested in the social progress and well-being of the country are earnestly engaged in discussing woman's relation to the professions and to the industrial arts, many promising fields of usefulness for which she seems specially fitted bid fair to be entirely overlooked in the determined effort to force open for her benefit every avenue to professional activity. Many over-zealous reformers seem determined, in the discussion of this labor problem, to ignore entirely the question of adaptability to the work to be performed. To attempt to maintain that woman is by nature qualified to do as well whatever is now commonly accomplished by masculine labor is plainly as absurd as to assert the contrary, that man power is as valuable as woman's in all feminine arts and vocations.

There are many employments to which women are manifestly unfitted; and any attempt to force them into these departments of labor invariably ends in well-merited failure. On the other hand, there are many industries which, from their very nature, would seem, to women seeking a means of self-support, especially inviting; and yet which have as yet scarcely received their attention. Foremost among these we would place photography. There are many reasons why as photographers women should achieve success. Any one familiar with the principles of the art need hardly be told that success therein rests on three qualities: first, good taste; second, neatness; third, deftness and skill in manipulation.

Photography is *par excellence* one of those arts in which "practice makes perfect." While a knowledge of the elementary principles of chemistry is of great assistance, and will, other things being equal, determine the most successful artist, yet even this is by no means an absolute necessity. Many of our most accomplished artists began work in utter ignorance of the nature of the materials they were using, reaching perfection simply by continual repetition and practice. Such a method, howeyer, is wasteful both of time and material; and any young artist, man or woman, will find a short course in some chemical laboratory a most admirable preparation for actual work in the gallery.

Having stated the three requisites to the first-class artist, it seems hardly necessary for us to show how woman from her very nature might be sure of superior excellence. First, in the matter of taste,—in position, in posing the subject for the portrait, in focusing and securing a clear, sharp image on the camera glass,—and finally in toning of the prints themselves, a woman's quick instinct and appreciative eye would be worth years of acquired masculine skill. Again, in the matter of neatness and skill in the manipulation of the bath, in flowing the plates, and in handling and mounting the prints, a woman's ready fingers are by a lifetime's training freed from the clumsiness which to a man is the first stumbling block to success.

Now, all these conclusions have been deduced by us, not theoretically, but from actual experience in our own laboratory, in the instruction of photographic students of both sexes. That experience confirms us in the belief that any young woman desiring a pleasant and independent means of subsistence cannot do better than to carefully train and equip herself as a photographic artist. It is in this belief that the Kansas State Agricultural College has established in its Chemical Department a photographic laboratory where such work and instruction can be obtained, and that as an industrial Institution it has included photography among its legitimate branches of instruction.—[Prof. Kedzie.

Extracts From Special Message of Gov. Geo. T. Anthony.

By act approved July 2, 1862, Congress donated to the State ninety thousand acres of land to provide a college "for the benefit of agriculture and the mechanic arts;" which grant, together with those hereinbefore enumerated, comprise the public lands belonging to the State—in extent, and for the purpose following: for common schools, 2,937,531.04 acres; for State University, 46,080 acres; for Agricultural College, 90,000 acres; for internal improvements, 500,000 acres; for erection of public buildings, 6,400 acres; salt springs, without specified purpose, 7,680 acres—making a grand total of 3,587,591 acres, exclusive of the 192,613 acres comprising the sixteenth and thirty-sixth sections within the Indian reservations, to which it is held by the General Government we have no claim.

To the condition and needed legislation in connection with these several grants of land above named, I now ask your careful attention. * * * * * *

AGRICULTURAL COLLEGE LAND.

It is safe to say that these endowment lands have been handled with more care and success than any like trust in the United States. I believe it better to leave them, as also the University lands, under the care of their respective Regents, than to take them under direct State care, unless the recommendations hereinbefore made for a land office are adopted.

There is a pride of character and a reward for success in the management of these large institutions of learning, which secures to them an average of good management in all their departments.

There is, however, in the present situation of some of these lands, an imperative demand for prompt and just legislation.

These lands were offered for sale, on payment by annual installments, covering a period of seven years from date of contract, under a representation that they were not taxable until the final payment was made and the patent became due from the State. At least two Attorney Generals of the State, Hoyt and Williams, so decided, giving such opinions in writing. In the sale this non-taxable character of the lands became a prime condition of the contract, whether named in the bond or not, not only securing purchasers, but enhancing the price of the purchase.

In some counties these lands were put upon the tax roll, and the Treasurer of Washington county was restrained by temporary injunction from selling them for taxes levied for the year 1873. The case *Mathias Oswalt vs. J. R. Hallowell*, Treasurer of Washington county, went to the Supreme Court, which decided in September, 1875, that the lands were taxable from the date of the sale contract, the Legislature not having expressly exempted them therefrom.

This decision was a surprise to the College authorities and their land purchasers, few of the latter having any knowledge of the pending controversy. There can be no doubt as to the liability of the State to make good this fundamental condition of the sale of its lands by its lawfully appointed agent, under a construction of law made for his direction by the Attorney General as chief law officer of the State.

The attention of the Legislature preceding you was called to this matter, and an act passed by it authorizing the Regents of the College to use the endowment fund to pay taxes due, and redeem land already sold for taxes. It is held by some that this is a misapplication of the endowment fund; working its impairment, and therefore in contravention of the express terms of the grant by the United States, and consequently illegal.

Of the lands now in this condition, the purchasers refusing to pay accruing installments until the tax incumbrances are removed, there are 30,995 acres, upon which are taxes to the amount of $10,915.75. Of this amount, $7,206.88 is held by the counties in which the land is situated, viz: $254.48 by Dickinson, $5,835.23 by Marshall, $1,117.17 by Washington, counties, $3,708.87 by individuals.

In addition to the above, there are 1,920 acres which have been fully paid for and State patents issued to the purchasers, but upon which tax titles had been perfected before issue of patents, and interest amounting to $2,170.50. These are cases of extreme hardship, for which you should not fail to provide a remedy.

In some cases where there are deferred payments, the purchaser may withhold payment to the College and secure his land by tax titles, making the loss to it instead of himself; but those purchasers who have in good faith paid in full, and secured patents to find them worthless, can not be left unprotected without incurring dishonor and final liability in the sum of taxes, interest and costs.

It seems to me the part of wisdom and justice for you to pass a law directing the striking from tax rolls all taxes accruing prior to the decision of the Supreme Court when such tax certificates are held by the county, and make an appropriation to meet all taxes assessed up to that date when the certificates are held by individuals. I ask you to carefully consider a suggestion to exempt all State lands—Common School, Agricultural College, University, and Normal School—from taxation until a patent is due by the terms of a contract of sale covering a period of not more than seven years. Such exemption would induce purchasers, increase values, and bring a return to the State and the localities where such lands are situated much greater than the sum received for taxes if left taxable as now.

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 10, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending February 10th, 1877.

DAY OF WEEK AND MONTH.		Temperature Max.	Min.	Mean.	Bar. Mean Hit.	Inches Rainfall
Sunday	4	62°	25°	43°.50	29.08	
Monday	5	53	23	36 .75	29.12	
Tuesday	6	59	37	45	28.95	
Wednesday	7	48	35	44 .25	28.90	.05
Thursday	8	44	21	33 .75	29.04	.36
Friday	9	49	24	37 .50	29.01	
Saturday	10	62	32	48	28.83	

Average temperature for the week, 41°.25.
Range of temperature for the week, 41°.
Rainfall for the week, .41 of an inch.

Number of students enrolled this term, **166.**

The modest sum of seventy-five cents will entitle you to the INDUSTRIALIST for a year.

We noticed Mrs. W. C. Barns, of Salina, sister to Mrs. Werden, among the visitors on Monday morning.

Several members of the Legislature and various citizens of Manhattan visited the College on Monday morning. Come often, friends, and see what is being done.

We have been unusually busy during the past week, and consequently are late with our paper. We are always sorry when this happens, and avoid it as often as possible.

The beautiful weather which we have so greatly enjoyed for the past two weeks, was very suddenly superseded on Sunday by rain, sleet, snow, hail, wind, etc., *ad infinitum*.

Will Sternberg, one of our old students, gave us the privilege of a hearty hand shake last Thursday. Will, though not attending College, is studying earnestly, and expects to enter the Harvard Law School next August.

The Alpha Beta's drama and farce, "My Brother's Keeper" and "A Race for a Widow," have arrived, characters have been assigned, and the parts mostly learned. Look out for a grand entertainment. These are the best pieces yet offered to a Manhattan audience.

The Rocky Mountain Locust eggs are yet in good condition, and evidently will yield ninety-five per cent of healthy 'hoppers. We have found the native grasshopper in warm places, and have had a few sent us, but have seen no young Rocky Mountain Locusts so far.

Mr. E. F. Waring, of Cisco, California, whom many of our students will recognize as a former member of this Institution, has placed the Chemical Department under many obligations to his generosity by the gift of a box of choice minerals, among which is a gold ore assaying $10,000 to the ton.

Dr. Bohrer, of Rice county, delivered a short lecture before the students last Monday morning, on "Bees and Bee Culture." The subject was well handled, and much information presented in such a form that it may be easily retained. The speaker thought that bee culture should be taught in the Agricultural College, as it is a profitable branch of farm industry when the surroundings are favorable.

Students' Column.

The question which was thoroughly debated by the Websters Saturday evening was, "*Resolved*, That he does right who does what he believes to be right." The decision was rendered for the affirmative. During extemporaneous speaking this question was one of the main topics.

The order of spelling was passed over this evening as no arrangements had been made, but the Secretary commenced the reading of Cushing's Manual, which will be followed by other works on parliamentary usage.

The question for debate next Saturday evening is, "*Resolved*, That protective tariff is a good thing."

REPORTER.

The Alpha Beta Society had a very interesting session last Friday afternoon, forty-five persons being present. By previous agreement a part of the regular exercises was suspended, and a special debate, with extended time, was put in the place. The question, "In cases of conflict between Science and the Bible, have we greater reason to accept Science as the guide?" was discussed by Messrs. Ulrich, Failyer and Ward for the affirmative, and Howard, Griffing and Humphrey for the negative. Five judges were appointed, three of whom decided in favor of the negative. Each speaker was given fifteen minutes' time, and the chief disputants had each ten minutes for closing. Messrs. Howard and Failyer spoke extemporaneously; the others were more or less confined to manuscripts. All in all, it was a good and, we think, a profitable debate.

Committee having library matters in charge reported books ordered. Probably the Society will have a good beginning for a library in a few weeks.

Miss Nellie Pillsbury and Messrs. E. C. and R. N. Frizzell and Amos Wilson were initiated. The next question for debate is regarding mixed schools. At the same time the "Gleaner" will be read by C. S. McConnell and Ida Willey.

The arrangements for the dramatic entertainment are progressing nicely, and the Society is undoubtedly in a prosperous condition, actually and prospectively.

OCCASIONAL.

[Continued from first page.]

nearly equal parts 4 and 3 boards high, have been made, 80 rods of fence have been rebuilt, and hurdles 5 boards in height, sufficient for 30 rods of portable fence, have been constructed. To these fences substantial gates and necessary appliances have been added wherever needed.

FARM MACHINERY.—Early in the season the Messrs. Deere, Mansur & Co., of Kansas City, Mo., through their agent, E. B. Purcell, of this city, placed for trial upon the College farm one of their Gilpin sulky plows. This plow we have given a thorough trial through the entire season, which enables me to speak positively of its merits. From the day the implement came on the farm it has been the favorite whenever its services were required, rapidly superseding the gang plow and the various walking plows heretofore in use. The advantages which may be claimed for this plow are:

First, the excellency of its work. In this respect it is greatly superior to any walking or riding plow that I have before seen. But its superiority in this regard is especially seen in corn stubble or very heavy clay lands. It turns under corn stalks more perfectly alone than did any other plow I have seen after the stalk-cutter had passed over the land. This fact alone makes it emphatically the western farmer's plow. Second, its lightness of draft. A single trial, taking for its standard the amount of earth inverted, will, I believe, convince any unprejudiced person of its superiority in this respect. Third, its strength and durability. Being made altogether of iron and steel, and its parts put together in accordance with mechanical principles, it combines strength and durability in an eminent degree. We have used this implement during the entire season without the outlay of a single cent for repairs.

The Kirby combined reaper and mower in use upon the College farm fully sustains the good opinion we formed of it last year. In the proper season it has been in almost constant operation, and has given entire satisfaction.

This sulky plow, a root cutter, and a few small tools, are all the additions made during the year to our stock of implements.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Press, Girard. Established 1869. Official paper of county and city. Republican in politics. Wasser & Riddle, Editors and Proprietors. 22-3m.

News, Peru. F. G. Moore & Co., Publishers and Proprietors. $1.50 per year. A newsy sheet published in the interests of Chautauqua county. 22-3m

Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-3m

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Expositor. Concordia. Only home paper in county. Large circulation. Large patronage. Independent. $1.00 a year. J. S. Paradis, Editor and Proprietor. 33

News, Girard, Crawford coumty. A Democratic weekly paper published at the county seat of Crawford county, $1.50 per year. Tipton & Lamoreaux, Editors.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka, Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Independent, Minneapolis, Kansas. Established 1871. The oldest, largest and cheapest paper in the beautiful Solomon Valley. Price $1.50 a year. Politics, independent but not neutral. W. Goddard, Publisher. 43-3m

Kansas Star. A weekly paper published every Saturday at the Kansas Institution for the Deaf and Dumb. Subscription price, fifty cents per year, payable in advance. Address all communications to E. W. Bowles, Olathe, Kas.

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

Farming for Profit.—Special courses in Kansas Practical Agriculture. Simple Tillage, Farm Implements, Comparative Physiology, Stock Breeding, Mixed Husbandry, Rotation of Crops, Manures, Feeding, Buildings. Apparatus illustrating the course in Practical Agriculture.

Kansas Publishing House.—Standard Stock, Standard Work, Standard Prices, to be had at the Bindery and Blank Book Manufactory of George W. Martin, Topeka, Kansas. Orders from counties and townships solicited. All sorts of books made, bound and rebound. Legal Blanks, Seals, Stationery and Job Printing.

Manhattan Bank.—E. B. Purcell, Banker; Jno. W. Webb, Cashier; Geo. S. Green, Attorney. A general banking business transacted. Bills of Exchange issued on all principal cities and towns of Europe. All collections have the personal, faithful and prompt attention of our attorney. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

Special for Woman.—Special lectures on Farm Economy, by Prof. Shelton, discussing the Dairy, Poultry, etc. Gardening, by Prof. Gale, treating of the vegetable, flower, commercial and ornamental. Household Chemistry, by Prof. Kedzie, consisting of the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc. Special Hygiene, by Mrs. Cripps.

Kansas Farmer.—A splendid Farm and Family Journal. In its 15th year, 10-page weekly. $2.00 per year. Original, Independent and Progressive.

Has quickly taken a high place among agricultural journals.—*N. Y. Tribune.* It has been conducted with energy and ability, and we have considered it among the best of our exchanges and a worthy representative of the West.—*Philadelphia, Pa., Practical Farmer.* Our Kansas friends should feel much pride in the high character and sterling worth of their State agricultural paper.—*National Live Stock Journal.* I like the KANSAS FARMER very much, and as early as my present engagement will permit I shall esteem it a pleasure to write for you on the terms you propose.—*Jos. Harris, of Moreton Farm, author of "Walks and Talks."* I read your FARMER with deep interest.—*Wendell Phillips.* Bears unmistakable evidence of the proverbial energy and enterprise of the West.—*Golden Era (Ill.)* Master M. E. Hudson, of the State Grange, says: "I never forget to mention the KANSAS FARMER as being worthy the support of all patrons."

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KANSAS STATE AGRICULTURAL COLLEGE.

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CALENDAR:—Winter Term began Thursday, January 4th, 1877, and closes May 23d, 1877.

For further information, apply to

J. A. ANDERSON, President.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, FEBRUARY 17, 1877. No. 44.

THE INDUSTRIALIST.

Published every Saturday by the

PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.

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Address A. A. STEWART, Manhattan, Kas.

Prof. Riley's Opinion Concerning the Prospect for Bugs.

It All Depends on the Kind of Weather We Have During February.

To the Editor of the *Globe-Democrat:*

In answer to the inquiry of H. J. M., in your yesterday's issue, permit me to say that the prospects for comparative immunity from locusts in the spring are increasing. Up to two weeks ago the eggs examined from different parts of the country were, with few exceptions, sound. The late very mild weather, if followed, as it doubtless will be, by severe cold, may prove to be worth millions to the people of the West. The winter has been more like that of 1866-7, than that of 1874-5, and we may begin to hope for a repetition of 1867 instead of 1875. All those which hatched in Southwest Missouri during the late warm weather will perish; but the eggs not hatched may not be seriously injured.

In this connection I take the liberty of sending you some recent answers to queries, published in the *Rural World*, as of sufficient interest, perhaps, for you to republish.

No subject more deeply interests the western farmers just now than the condition of the locust eggs. From among the inquiries that come to me, those I enclose represent widely separated sections, and I would ask all correspondents making inquiries in future — and the more the better — to always accompany them with a small tin box of specimens.

Yours, truly, C. V. RILEY.

St. Louis, February 6th, 1877.

As per request published in *Rural World* of 3d inst., I send you, by to-day's mail, specimens of grasshopper eggs procured on my farm, as follows: Specimen No. 1 was procured in house yard, where exposed to constant tramping; No. 2 from loose soil, in an exposed position; No. 3 from a foot path, on south side of hedge. Please examine and report upon condition of the several specimens, and oblige, DR. W. F. RUTBOTTOM.

Rhea's Mill, Collin County, Texas, January 16.

All three lots were sound, and the embryon so far advanced that a week's mild weather would hatch the young. [Since this was written they have all hatched.]

I have for some time past been carefully examining the deposits of locust eggs in this vicinity, and find them nearly addled, very few indeed being found, and those only upon sod, in which segmentation can not be detected with the aid of a small magnifying glass. Other observers here report the same condition, and we are satisfied that no fears need be entertained of damage from the young brood, provided the addled eggs do not hatch. Can the development within the eggs be arrested, and yet go on upon the return of proper conditions? Some of us have been led to fear that such might be the case by the plump, fresh appearance of the little rascals, after repeated freezing and thawing. Your answer to the above question will be thankfully received by many of us here, who depend upon our farm crops for a living. A. ROBERTS.

Lincoln, Nebraska, January 13, 1877.

It is difficult to get at what Mr. Roberts exactly means. Eggs once "addled" of course never hatch, but "segmentation" does not indicate an addled condition. On the contrary, it indicates development. The best way to get positive information is to send me specimens.

Herein find eggs of Rocky Mountain locust. What is their condition? A. A. DYE.

Lamar, Barton County, Mo.

The eggs are below the average size, and part of them dead. The probabilities are that few of them will hatch.

I am very much interested in this "hopper question," as great quantities of eggs were deposited in this section last fall. I have read carefully the proceedings of the Conference in Omaha; also, some of your articles in the New York *Tribune*; but find nothing on the point of what advancement the eggs make towards hatching in the fall. Of all the egg-sacks examined (which were not addled), the eye of the hopper could be discerned through his particular covering; and, on removing the covering, the hind legs could be raised clear of the body, by the aid of a pin. The question is, after making that advancement will they live through the winter and hatch out in the spring? S. C. BASSETT.

Gibbon, Neb., January 10, 1877.

Yes! I have had them in that advanced condition; kept them till the first of the year; then brought them into a hatching temperature, and they hatched.

I have just been reading the report of your meeting at Omaha, on the grasshopper, and as I live in this great grasshopper country, and am a firm believer in your treatise and sayings on the pest, I have some questions to ask. I made some observations last fall, and up to the time the ground froze up, of their eggs; and would ask, if young eggs will hatch that were so far advanced that, in breaking open the egg-sack, you could distinguish the hopper's eyes and the shape of his legs? Now, it seems to me that eggs that far advanced must certainly be destroyed by the cold weather we have had of late. Am I correct? By answering this you will confer a favor on one who is greatly interested. It is the prevailing opinion of most of the people that we won't be hurt much in the spring. Thus far there has been very little prairie burnt, and am in hopes by your advice and others, who understand the nature of the hopper, to give them a warm reception in the spring, if they hatch to any great number. M. A. ARNOTT.

Minneapolis, Ottawa County, Kansas.

I would not dare give you hope without examining specimens. Send some along. Little hope can be built on the advanced condition of the eggs. Better prepare to give the young fellows a warm reception in spring.

I have sent you by mail to-day some hopper eggs, taken out of the ground on Dec. 25th. They have been in my store ever since. I have some eggs that have never been outside my store since September, and also some taken out of the ground the same day that the ones I send were. I am watching them as closely as I can. WM. C. RALLS.

Le Sueur, Minn.

The eggs are very small, as the pods also, and fully one-half of the eggs are addled.

I wish your opinion in relation to a question under discussion here, viz.: "Will the grasshoppers that are now in a fleshy or larval state hatch?" The eggs that were laid during the earlier part of the season that the 'hoppers were here, have developed into a larval state, and many persons claim that, because of that development they will perish by the winter. My opinion is, that they are all right and will hatch. What do you say? The later laid eggs are yet in a fluid state. H. C. RAYMOND.

Council Bluffs, Iowa.

I am, as will be seen above, of your opinion.

I have to-day been examining grasshopper eggs, and where they are thickest I have found worms or larvæ like the enclosed. Are they the white worms that were in the egg cocoons last fall, or are they something else? The grasshopper eggs seem in good condition; but we are having very warm weather now, and the frost is coming out of the ground. The weather is much like that we had in '67-8. I found no worms in the cocoons with the eggs. WM. DUNN.

Syracuse, Otoe Co., Neb., Feb. 1st, 1877.

The larvæ sent have been preying on the eggs. This larvæ is a sluggish, yellowish grub, measuring about one-half an inch when extended, which is found within or beneath the locust eggs, lying in a curved position, the body being bent so that the head and tail nearly touch each other. It is a smooth grub, with a very small, brown, flattened head, with the joints near the head swollen and the hind end tapering, and with deep, translucent sutures beneath the joints, which sutures show certain vinous marks and mottlings, especially along the middle of the back. It exhausts the eggs and leaves nothing but the shrunken and discolored shells. It has not yet been reared to the perfect state, but from the structure of its mouth it is evidently Hymenopterous, and will produce, without much doubt, some ichneumon fly. It has been found in Minnesota, Iowa, Kansas and Missouri, and has destroyed about one per cent of the eggs. I shall be very glad to receive all further specimens that you may happen to find. The locust eggs are yet sound, but I have some hope that the recent very warm weather, if succeeded by severe cold, will cause the death of a large portion.

Friend Clarkson, agricultural editor of the Iowa *State Register*, recommended that grasshopper eggs be sent you for examination, and I send by mail to-day in a tin box some eggs which have been taken from the ground under the following conditions: As you will find, I have packed them in layers in the box, with paper between. The top layer was taken from black loam on a piece of ground apt to keep dry — that is, well drained — and have never been completely thawed since frozen in the beginning of winter. The middle layer was taken from sand, and has repeatedly been frozen and thawed out — the water from thawing snow running over and completely saturating the sand daily for some days. The bottom layer is from low land, which was submerged in five feet of water for ten days after they were deposited in the fall, the ground remaining muddy till frozen. afterwards covered with snow; the continued thawing and evaporation of the last few days have removed the snow and left the surface for two inches in depth thawed and dry. For the past few days we have had it warm in day-time, but freezing at night. The place is in Adams County, ninety miles east of Council Bluffs, and forty miles north of the Missouri line. WM. THOMPSON.

Mt. Etna, Adams County, Ia., Jan. 30, 1877.

The eggs from all three of the different positions are so little advanced in development that it is impossible to say positively that they are all sound. The liquids have scarcely begun to thicken. So far as I feel warranted in giving an opinion, I should say that they are all sound — those of the third batch only giving some evidence of injury by the weakening of the integument. Hope Mr. T. will send more toward spring.

By this mail I forward to you one box of the grasshopper eggs. Are they in a good state of preservation, and will they hatch in the spring, if everything hereafter is favorable?

Inclosed I hand you an extract from the *Inte-*

[Continued on fourth page.]

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 17, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY

KANSAS papers not receiving the INDUSTRIALIST will oblige us by telling us of it.

Legislative Appropriations.

The Regents of the Agricultural College, after a careful consideration of the wants of the Institution, and after greatly reducing the estimates made by the heads of departments, applied to the Legislature for $23,701.66 for the year 1877 and for $19,900 for the year 1878, or a total for the two years of $43,601.66. Of this sum, $11,001.66 were asked for the last payment on a debt contracted in 1870, three years before the present management became responsible for the conduct of the College; $20,500 were for the erection of buildings; and $12,100 for the equipment of the various departments specified.

The Ways and Means Committees of the House and Senate have had the bill under consideration several days. A large sub-committee has visited the Institution and made diligent inquiry into its condition and imperative needs. The Joint Committee finally agreed upon the following items. We give the sums asked for by the Board of Regents, the amount allowed by the Ways and Means Committees, and the large and luscious slices whacked out:

FOR THE YEAR 1877.

For what purpose.	*Asked for by Regents*	*Allowed by Ways and Me'ns Com*	*Cut.*
For the payment of college warrants due in 1876, and accrued interest	$ 6,813 20	$ 6,813 20	
For the payment of college warrants falling due in 1877, and closing out the debt,	4,188 46	4,188 46	
For the erection of a stone barn for Farm Department	4,000 00	4,000 00	
For seeds, exp'rimn'ts, cabinet and equipment for Farm Dep't	800 00	300 00	$ 500
For greenhouse, stock, cabinet and experiments for Horticultural Department	1,000 00	.....	1,000
For moth-proof cases and cabinet for Entomological Dep't	750 00	250 00	500
For philosophical and chemical apparatus	750 00	500 00	250
For additional tools and material for Mechanical Dep't	500 00	300 00	200
For machines and material for Woman's Industrial Dep't	300 00	300 00	
For type and material for Printing Dep't	200 00	200 00	
For instruments and material for Telegraph Dep't	150 00	150 00	
For models, material and instruments for Drawing, Mathematical and English Dep'ts	500 00	.....	500
For finishing College and Mechanical buildings	1,000 00	1,000 00	
For sidewalks	750 00	300 00	450
For library	1,000 00	.....	1,000
For fire extinguishers,	500 00	500 00	
For insurance	500 00	.....	500
	$23,701 66	$18,801 66	$4,900

FOR THE YEAR 1878.

For what purpose.	*Asked for by Regents*	*Allowed by Ways and Me'ns Com*	*Cut.*
For Practical Agricultural building	$12,500	$12,500	
For seeds, experiments and cabinet and equipment for Farm Dep't	500	.....	500
For stock, experiments and cabinet for Hort. Dep't	300	.....	300
For moth-proof cases and cabinet for Entomological Dep't	250	.....	250
For philosophical and chemical apparatus	750	.....	750
For tools and material for Mechanical Dep't	200	.....	200
For machines and material for Woman's Industrial Dep't	300	.....	300
For type, material and instruments for Printing and Telegraph Dep'ts	300	.....	300
For equipment and material for Drawing, Mathematical and English Dep'ts	300	.....	300
For library	1,000	.....	1,000
For Farm house	3,000	.....	3,000
For insurance	500	.....	500
	$19,900	$12,500	$7,400

It will be seen that of the amount allowed by the Committee for 1877, $11,001.66 are for the payment of the debt, $5,000 for buildings, and $2,000 for the equipment of departments. For the year 1878, $12,500 are allowed for the erection of a Practical Agricultural building, and nothing for departments. These appropriations are for two years, and the sharp and glittering point which terminates their tail is that while the Committee is willing to aid departments in 1877, it is determined that they shall take care of themselves in 1878 whether they can or cannot.

We have no complaint to make or fault to find with the action of the Committee. The Legislature has numberless claims upon it, and must view each from the standpoint of the State's ability. The Agricultural College is the property of the State, and no matter how imperative may be its wants, or how grinding its real necessities, it is the function of the Legislature to determine what aid can now be afforded. The items allowed by the Committee are the most imperative and most important ones, and while we don't see how the Institution can do without the others, yet we do see that if the Committee fairly expresses the sentiment of the Legislature, they have got to be done without. If any one wants a harder-pan basis than the Committee's bill, then, whether such be his intention or not, he had better kill outright the only institution in the State for the practical education of farmers, mechanics, and woman as an industrialist, than to make further "cuts."

The Agricultural College.

We were at the College this week, and were delighted with the neatness of the rooms and the air of real student life everywhere exhibited. The model kitchen would take the heart of every real housekeeper in Kansas, or any other State, and to think that the really excellent extension table and good kitchen tables were made by the students, seems almost miraculous. The boys work one hour each day in the shop, and the articles made during that time are sold for the benefit of the State. We found Mrs. Cripps busy teaching her class of young ladies how to choose good meat and get up a good dinner. Mrs. Werden's students were at work at pianos and organ. W. C. Stewart was showing his class about battery and positive and negative poles, and galvanic circles, besides all the other wonders of talking by lightning. Mr. A. A. Stewart was at the case with some of his students setting type for that really interesting paper the INDUSTRIALIST. Of course Mr. Todd was in his element at the work-shop, and his boys were turning out plows, wheelbarrows, work-benches, tables, bureaus, cupboards, and other useful articles; while the girls were at the little saws making pretty brackets, wall-pockets, match-holders and the ornamental articles of the home.

We saw Prof. Kedzie at the laboratory with a class of fine looking young men and one young lady busy in the new class-room. At the request of some of the visitors the students went to the laboratory and performed some wonderful chemical transformations with the business air of professed chemists.

Up at the Barn we found Prof. Ward deep in the sciences, and delighted to show his little box of mathematical instruments with a sort of air that said, "How is that for a State Institution?" The new teacher in Drawing seemed at home in his business. Mrs. Ward, with a class of the best students, was rubbing still brighter the æsthetical part of their natures. Upstairs, after passing through the chapel where a few students were poring over their books, to be in readiness for second hour, we went into the old laboratory which has been turned into a fine school-room, and there found Prof. Platt conscientiously drilling the students in that part of the arithmetic which shall help them to compute interest or make them look out for their share of the property when stockholders in some large banking institution, or when doing a smaller business by having a note discounted at the same bank. We looked around for Prof. Shelton but could not find him, and as it was a cold and windy morning, presumed he was down to that apology for a barn, trying to hold on the blankets which cover the fine stock owned by the State, and which brings in yearly such a nice little sum for its benefit.

But as we trotted round over this College, from room to room and from building to building, over the nice walks, through the beautifully laid out grounds, and looked back three years, we felt a contempt for ourselves that our faith had been so small, and were amused also at the thought that when, years ago, we had predicted something like this, others had said, "You are letting your imagination run away with you." Within a year, we have read the history of several of the colleges in the United States and, on comparing the history of this institution with that of these others, we find this has profited by their successes and avoided their mistakes, and where theirs went on at a snail's pace this could go with that of a railroad locomotive. Success, say we, to the State Agricultural College, which should be the boast and pride of Kansas and of the West.—[Z., in Nationalist.

No prairie State in the Union excels Kansas in the variety and excellence of its building stone.

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 17, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER, Agent.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending February 15th, 1877.

DAY OF WEEK AND MONTH.		Temperature Max.	Min.	Mean.	Bar. Mean Hi't.	Inches Rainfall
Friday	9	49°	24°	37°.50	29.01	
Saturday	10	62	32	48	28.83	
Sunday	11	49	16	35 .50	29.09	.05
Monday	12	38	20	27 .25	29.35	
Tuesday	13	38	39	32 .75	29.23	.05
Wednesday	14	40	31	37 .75	29.02	
Thursday	15	42	24	35 .25	29.03	

Average temperature for the week, 36°.28.
Range of temperature for the week, 46°.
Rainfall for the week, .10 of an inch, ½ in. snow.

Number of students enrolled this term, **166.**

Miss Alice Stewart has gone to Oberlin, Ohio, for the purpose of attending the well-known College situated at that place. She expects to be gone two years.

We are sorry to record the illness of President Anderson's wife. She has been quite sick for a week, but under the skill and care of Dr. Roberts is recovering.

We are indebted to W. C. Howard, one of the advanced students in the Printing Department, for the synopsis of Mr. Dixon's lecture, and for several other notices which appear. Many thanks, Walter. Do so some more.

We interviewed the Shorthorns, Jerseys, Devons, etc., at the College yards the other afternoon, and found the stock in a healthy and prosperous condition. Several very fine calves have lately been added to the herd.

Mrs. J. E. Platt dropped in on us yesterday evening, when we were busy printing the "outside." Professor was along, too, but then he comes often and we thought we wouldn't notice him. Come and see us by daylight, Mrs. P.

Boys, take the girls to the drama on the 22d. They want to go; and, if the roads are good, would just as soon walk as not. There is no need to spend a fortune for such pleasure, but thirty-five cents cannot be spent in a nobler way.

Mr. Jacob Winne is digging a cistern, at the northeast corner of the Horticultural building, which is to have a capacity of two hundred barrels. Boys who hang around our office and are addicted to asking questions and relieving themselves of surplus gas may quietly make a note of this fact. The cistern is situated but a few steps from the office, and may be called upon to contain something besides water.

One of the divisions of Prof. Ward's surveying class measured the height of the ball on the Laboratory building yesterday. The class is separated into several divisions, each of which is expected to do practical work of this nature to exemplify the principles learned in the class-room. We trust Prof. Ward may as justly feel proud of this class as he did of the one which he took through geometry last term.

During the first hour last Wednesday, we made a short visit to the Drawing class. Undoubtedly this department is a success. There are over one hundred students in actual attendance in the present classes. There were about thirty in the class we visited; and as we watched the work it was with almost surprise that the advantages and advancements of this class beyond those of two years ago was noticed. There has been continual improvement, and now the class-work looks like real business. Mr. John Walters, the present teacher is in his sphere — knows where he is, what should be done, and how to do it. He formerly held a similar position in Europe, and a few moments in his class-room show his accurate skill and knowledge in this branch of education.

W. C. H.

By invitation of President Anderson, Mr. J. J. A. T. Dixon, chairman of the House committee on Agricultural College, made a few remarks to the students. Below we give a brief synopsis:

There is a "be" that is not "b-e-e," but it should be pointed. Say "*I am*" with weight in it, so that others will feel it. Be proud; God never made an ignoble creature. But think not of yourself more highly than you ought. Weigh the mind; it should grow. If my boy were here a year and didn't weigh more at its close, his time would be lost. If teachers do not develop the mind, they are out of place. Men may be "educated" or "learned;" be both if possible. Work in the best way, and *know* you are. Don't float; don't drift before the gale; but stand up! Control circumstances,— make the tide carry you to *your* haven, the wind drive you to port, and not on the rocks. Have faith in God, yourselves and the present, remembering the mental and physical are servants to the moral; and by this last you stand or fall. If there is anything this State and nation needs it is an educated class of farmers,— men in the furrow knowing more than the horses before them; men in the harvest fields who can beat the machines they use; women in the houses who are not slaves to their work, but mistresses of it. Be such men! Grow up into such a womanhood! But do not stop on the surface, reach above it, extend below it, and remember the age before us is one wherein moral worth, purity and strength of character will be the measures used to determine your real value as men and women.

We are not afraid of the judgment of men who can handle practical subjects in so common sense a way as did the speaker in the few moments he occupied.

W. C. H.

We are indebted to the *Nationalist* for the following items:

There are four miles of line and twenty-five line instruments in the service of the Telegraph Department of the Agricultural College.

The Agricultural College Committee of the House of Representatives came up on Monday to visit that institution and returned on Wednesday. Like all others who examine into the workings of the College, they were well pleased with what they saw of its workings.

The Ways and Means Committee were up from the Legislature this week, and visited the State Agricultural College, going through the buildings and over the grounds as much as possible in a short time. We heard some astonishment expressed at she amount of work which had been done, and which was going on here, and all seemed pleased with the Institution.

Students' Column.

The meeting of the Websters last Saturday evening was a remarkably orderly and interesting one. All the debaters were present and entered heartily into the question, which was on the subject of tariff. The decision of the judges was for the non-tariff speakers.

In three weeks from this meeting the Websters hold the first of several moot-legislatures. Members will be appointed to represent different counties, and all the proceedings will, as far as possible, be carried on like a legislature.

The question selected for debate next Saturday evening is, "Resolved, That married life is productive of more happiness than single."

"Thursday, Feb. 22d, 1877, 7:30 P. M., at Peak's Hall." Thus reads the final announcement for the Alpha Beta entertainment, and it is enough to gain the presence of all those who have attended the plays heretofore given by this Socieiy, if it is possible for them to be there. To all others we say, come and see. It will cost you only thirty-five cents for a reserved seat, or twenty-five cents for a chance at a seat. If you don't get the worth of your money and time, just report to the Society. Below will be found the cast of characters:

"MY BROTHER'S KEEPER."

Abel Benton, Merchant.....G. H. Failyer.
Matthew Allen, } his Clerks.....J. S. Griffing.
Richard Carnes, } his Clerks.....Geo. L. Platt.
Charles Benton. } his Clerks.....W. P. Burnham.
Job Layton (Scraps), a Rag-picker,C. S. McConnell.
Grace Benton, Abel's daughter.....Miss Cora Neale.
Rachel Allen, Matthew's sister...Miss Humphrey.
Betsey Benton, Abel's sister.....Miss Ella Child.

"A RACE FOR A WIDOW."

Mr. Cornelius Popjoy.....S. M. Ward.
Mr. Adolphus DeCreedmore.....D. A. Beamer.
Mr. Capsicum Pepperpod.....J. S. Griffing.
Mr. Springwheat, a Farmer.....J. S. Griffing.
Miss Tabiatha, an old Maid of the Inn...Ella Child.
Isabella, Pepperpod's Wife.....Miss Ella Child.
Mrs. Winnington.....Miss Cora Neale.
Biddy.....Miss Ida Willey.

The services of the Manhattan String Band have been secured for the Alpha Beta entertainment. This guarantees plenty of the best of music, and, with the other parts, makes this the most extensive entertainment yet given by the Society. Only twenty-five cents. Tickets at Fox's store, at this office, and at the door.

[Continued from first page.[

rior. You will see the question raised there as to whether an egg can be partially hatched, as these are, and then the process delayed for a long time, and afterwards resume the work and go on to completion. All our people here regard this proposition with considerable doubt. In fact, they deny that such a thing can be done. I should infer that you hold that these eggs will hatch, notwithstanding the interruption. Will you please enlighten us fully as to why this is thus? J. B. SHANE.

Hutchinson, Kansas, January 29, 1877.

The article alluded to by Mr. Shane closes with the following editorial remarks:

Without arrogating to ourself any special wisdom on the subject, but reasoning from analogy only, should decide that in the case of the eggs referred to by Major Shane—and in fact, all the eggs in the country in the same condition—incubation has been arrested, and that once arrested it has ceased forever. In all life that emanates from an egg (and what life does not, except the vegetable?), when its development is arrested during incubation, it is a permanent paralysis; in other words, it is death. We say that, analogically, this should be so, but we may be wrong.

Most persons, having in mind the well-known fact that birds' eggs become addled if incubation ceases before completion, when once commenced, would from analogy come to the same conclusion as the editor of the *Interior*. But analogy here is an unsafe guide. The eggs of insects hibernate in all stages of embryonic development, and many of them with the larva fully formed and complete within. The advanced development of the locust embryo in the eggs sent by Mr. Shane argues nothing but very early hatching as soon as spring opens. Their vitality is unimpaired, as Mr. Shane may soon prove by bringing them into a warm room. I have had such forward eggs hatch the present winter after various periods of freezing.

Inclosed please find eggs of Rocky Mountain locust. They were taken on my farm, on south-east quarter of section 19, township 28, range 27, county of Lawrence and State of Missouri.

W. R. GOODMAN.

February 2, 1877.

Fully ten per cent of the eggs are dead and more or less decomposed. As in other instances from Missouri, a number of the masses, as also the eggs, are far below the average size, and, compared with those received from the farther West and South, are evidently lacking vitality. They were doubtless the last eggs laid, just before winter, and when the insects were nearly exhausted.

Locust Injury Next Spring.

The Territory in Missouri that Will Probably Suffer Therefrom.

As will be seen by a communication in another column, there is a keen interest felt just now by the people in much of the western country, regarding the locust prospects. It is my purpose, in the present communication, to map out the area in Missouri that will in all probability suffer next spring.

First, then, let me state that the middle western counties, which most suffered in 1875, *i. e.*, the portion of the State in which the winged insects reached furthest east in 1874 and laid most eggs, will not suffer any next spring. Such are the counties of Platte, Clay, Jackson, Lafayette, Cass, Johnson, Bates, Henry, Pettis and Benton. In these counties the farmers have nothing to fear, except as they receive a few straggling and comparatively harmless levies of the winged locusts in June and July, from the neighboring country.

The counties that will suffer are: 1. Atchison and Holt, and the western half of Nodaway and Andrew, in the extreme northwest corner. 2. McDonald, Barry, Jasper, Lawrence, Barton, Dade, Cedar, Vernon — more particularly in the southwest half; Polk in the northwest third, Hickory in the southwest third, and St. Clair in scattering places.

The locusts came into all these counties last fall, very generally ate off the fall wheat and filled the ground with their eggs, in most parts quite thickly; and in all of them we may expect more or less injury next spring from the young locusts.

In another column I have already stated that the eggs are so far sound, and the bulk of them bid fair to hatch. As it is my desire to report from time to time, as spring approaches, the condition of these eggs, I shall be glad to receive samples from *Rural World* readers, every two or three weeks, for examination. If in any county, or part of a county not mentioned in the list, eggs have been laid, I shall consider it a favor to be informed of the fact. It is my desire to give as detailed an account as possible, in my forthcoming Report, and any correspondence that will aid thereto is solicited.—[Prof. C. V. Riley.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-3m

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Expositor. Concordia. Only home paper in county. Large circulation. Large patronage. Independent. $1.00 a year. J. S. Paradis, Editor and Proprietor. 33

News, Girard, Crawford coumty. A Democratic weekly paper published at the county seat of Crawford county, $1.50 per year. Tipton & Lamoreaux, Editors.

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Independent, Minneapolis, Kansas. Established 1871. The oldest, largest and cheapest paper in the beautiful Solomon Valley. Price $1.50 a year. Politics, independent but not neutral. W. Goddard, Publisher. 43-3m

Kansas Star. A weekly paper published every Saturday at the Kansas Institution for the Deaf and Dumb. Subscription price, fifty cents per year, payable in advance. Address all communications to E. W. Bowles, Olathe, Kas.

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

Home Record, Leavenworth, Kansas. Established in 1872. Is the organ of the Home of the Friendless, an Institution founded and controlled by the women of the State of Kansas. Circulation, 3,200. No better medium for advertising in this section. Mrs. C. H. Cushing, Editor. 44-3m

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, FEBRUARY 24, 1877. No. 45.

THE INDUSTRIALIST.
Published every Saturday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Report of the Committee on Agricultural College.

MR. SPEAKER:—Your Committee on the Agricultural College instruct me to make the following report:

Feeling it to be our duty to inquire into the matters indicated by our name, your committee asked permission of the House to visit the State Agricultural College, at Manhattan, and examine into the condition and working of that institution. This we did on the 12th, 13th, and 14th inst. We desire to lay before the House the facts we thus learned.

First: We found a literary department, where some of the sciences are taught. Visiting recitation rooms, we found classes reciting in algebra, mental philosophy, advanced arithmetic, industrial drawing, chemistry, practical agriculture, and horticulture. We found these sciences taught in a thorough and practical, or usable manner, and by teachers who showed themselves masters of their profession. Entering the recitation of the class in practical agriculture, we found the professor instructing his class in the mysteries of stock breeding, leading them to those principles which the experiences of years, in this and other countries, have proved to lie at the foundation of success in that business.

In the chemical rooms, we found, not the laboratory of a scientific college, but only enough of this science to enable the students to understand the nature, relation, and presence of agents, and also to analyze substances; or, in other words, just such chemical knowledge as is of great benefit to industrialists.

In the horticultural rooms, we found the professor instructing his class in the art of grafting fruit trees, and also in those principles and facts necessary to the successful management of a green-house.

Passing from the literary department, we found another, consisting of various shops. In one, we found young ladies learning to cut, fit, and make the various articles of ladies' wear. In another, we found young men handling saws, planes, compasses and chisels, while others were busy at the turning-lathe; and here also were young ladies, with bracket-saws, making articles of use and beauty. In one shop the sons of Vulcan were forging (not thunderbolts for Jove, but what is better and more stirring,) harrow-teeth, with which to urge Mother Earth to more superb fruitfulness.

In another room, we found young men and ladies learning telegraphy, with instruments and batteries in operation. And in yet another is a printing office, well arranged and operated. Here were young men and ladies learning the art of printing, some of them, because they expect to follow that business, and one, to perfect himself in spelling. Here is published the INDUSTRIALIST, the news-child of the institution.

We next passed to the farm and stock. The farm has in cultivation one hundred and eighty-five acres. In it was grown, last season, corn, wheat, rye, oats, barley, timothy, millet, alfalfa, and other grasses. On it is a small piece of blue-grass, in fine condition — a good success in growing that grass. The farm we found well managed, as two nice cribs of corn will testify.

Of stock, we found of cattle, Short-horns, Devons, Galloways and Jerseys; of swine, thorough-bred Berkshires and Essex. These, both cattle and swine, were fine animals — worthy of any farm — were in good condition, but did not show in their appearance any too much care at the hands of their keeper. "Grace Young," with apparent pride, arranged before us her four daughters and one granddaughter — the eldest of her daughters being three years old. It is not necessary to say that Prof. Shelton was proud of this evidence of his success in stock breeding.

We found that the Superintendent of the farm was engaged in conducting experiments with grasses, cereals and fertilizers. Of these experiments, and their results, he keeps a strict record.

In another part of the farm, under the care of the Superintendent of Horticulture, we found a fine nursery of thirty or more acres; that is, nursery and orchard. Suffice it to say, it is well arranged, and promises to be, not only profitable to the horticultural interests of the State, but of financial benefit to the institution.

On the farm we found no barn, and only a feeble apology for a stable; the building or shed occupied for this purpose being a sort of extempore concern, and too small for the stock, which from necessity was crowded into it. This may account for the apparent neglect in the care of the stock.

The piggery is not very large, but a model in its way, and is a convenience every farm might have.

The buildings of the institution call for attention. The main building, in which are the recitation rooms and chapel, is a very incommodious one, having originally been intended for a barn. It is inconvenient, and too small. The horticultural building is plain, solid, and well suited to its purpose. So is also the chemical laboratory building, these having been erected in the last year. The building in which are the work-shop, printing and telegraph offices, accommodates them well. The buildings just named prove that the appropriations of the last two years have been wisely and economically expended.

Your committee examined into the finances of the institution only enough to be satisfied that this matter is managed with great care and ability. We also find that the report that no records were kept in the different departments of the institution is untrue, as in all of them the records are kept. These records ought to be published, and to this matter we would call special attention.

After seeing what has been here so meagerly described, your committee were agreeably disappointed in finding the condition and working of the institution better than they had expected.

We had in view all the time this question, Is this college striving to make, and is it making, agriculturists and mechanics? We now answer this in the *affirmative*. It has its faults. Its course might be reduced from six years to five, perhaps; but we feel that, under its present management, all the forces of the institution are used to make it a farmers' and mechanics' institution. We feel that it ought to be sustained by as liberal appropriations as the State is able to make. Especially do we feel that the appropriations for a barn, and for an agricultural building, for which the Regents ask, ought to be granted. When this is done, the institution will be well-nigh able to sustain itself.

J. J. A. T. DIXON, *Chairman*.

MR. JOHN WELLS has a herd of some five or six hundred cattle in Rooks county, that have gained their subsistence from the range during the entire winter, and have been taken care of by one man. In the hard storms last month, which killed thousands of cattle in Texas, Mr. Wells lost only two head. Who will say this country is not the stock-raiser's paradise? — [Stockton News.

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 24, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

JUDGE BREWER'S lectures on Practical Law will begin Tuesday, March 6th, 1877.

ON the first page will be found the Report of the standing committee on the Agricultural College, which is composed of the following members of the House of Representatives: Messrs. Dixon, of Russell county; Cunningham, of Anderson; St. John, of Riley; Roe, of Douglas; Plumb, of Lyon; Hewins, of Chautauqua; and Emlen, of Atchison. All of these gentlemen except one are practical farmers, and all concurred in the Report.

Report of Sub-Committee.

A report has been presented to the House, entitled "Report of Sub-Committee on Agricultural College," by the chairman of the Committee on Needed Legislation. The sub-committee consisted of this gentleman alone, as no other member of that committee has visited the Institution since the Legislature assembled. Some of its statements, which might as easily have been explained in the report itself, we notice as follows:

"The State Agricultural College, for the benefits of agriculture and mechanical arts, at Manhattan, after an existence of ten years, receiving from the State, during that time, $194,875.96, and being endowed with a grant of land from the General Government—the yearly income of the proceeds of half of said lands being $20,000 now—is to-day a college without a college building."

In a second edition of the report, the $194,875.96 said to have been received from the State by the College was reduced some $50,000 and placed at $144,943.32. Probably this latter sum was taken from the figures in the Report of the Board of Agriculture, which include the pay of Regents since the College became a State institution. The Auditor of State certifies that, according to his records, the amount appropriated to the College, exclusive of pay of Regents, has been $139,458.47; and the difference between these amounts, $5,484.85, may be taken as the pay of Regents. But the money which the State has paid its trustees as mileage and per diem cannot fairly be reckoned as any part of the sums which these Regents have used in equipping the institution.

The College was organized as a State institution Sept. 1, 1863, and is therefore thirteen instead of ten years old. We became President Sept. 1, 1873, and by January 1874 radical changes were made in the course of instruction, lectures in practical agriculture were begun, and the various industrials were introduced. No reasonable man can hold us responsible for anything previous to our connection with the Institution, at which time the appropriation for 1873 had been expended. The following statement explains itself:

Total appropriation by State to Agricultural College		$139,458 47
Expended previous to 1874	$82,400 00	
Debts incurred previous to and paid since January 1874	28,258 47	—$110,658 47
Expended since January 1, 1874		$ 28,800 00

DISTRIBUTION.

For Departments.		
For Equipment of, 1874	$6,000	
For equipment of, 1876	1,900	—$ 7,900
For Buildings.		
Mechanical, 1875	$7,500	
Horticultural, 1876	4,000	
Laboratory, 1876	8,000	
College, 1876	1,000	
Outhouses, 1876	300	
Blacksmith shop, 1876	100	—$20,900—$ 28,800 00

The fact that of this $28,800, $20,900 have been expended in erecting three permanent buildings, and that the remainder has been expended in tools, apparatus, fencing and similar equipment of departments, is the very best evidence that the $20,000 income from the endowment has been expended in salaries and those expenses inseparable from instruction. Since 1873 the College has been nearly self-supporting, the State being under contract to furnish buildings; and, if the present bill becomes a law, and crops are fair, we confidently expect that when the next Legislature meets, it will be wholly self-supporting.

"In ten years only eleven persons have graduated, and comparatively very few of the students now desire to become farmers."

For "ten" read thirteen years, during which time twenty-seven students have graduated. Not less than one-half of the male students now intend to be farmers and probably three-fourths will be. In the last three years a greater change has occurred in this, than in any other respect.

About "New Ideas" in Agriculture.

There is an idea prevalent in the minds of many people who have never given the subject other than a very superficial consideration, that new and valuable "ideas and suggestions" are within easy reach of every Agricultural College that has a mind to set about it. Now, we submit that statements of this sort imply an unusual amount of either stupidity or idleness in the hundred and one wide-awake agricultural experimenters and writers who have labored since the days of Jethro Tull. These men have professed the utmost zeal in the cause of agricultural progress; they have written libraries; but it is doubtful if they have discovered a single principle that has materially affected the general course of agriculture.

Dr. Clark, of Amherst, Mass., has said that it requires ten years to establish any agricultural fact, and the experience of every genuine experimenter lends support to this view. Messrs. Lawes & Gilbert, of Rothamstead, England, experimented very largely for forty years at an annual expense of not far from $20,000, but beyond overthrowing a number of the notions of presumptious speculators, and establishing upon a philosophical basis some of the common practices of the farm, very little can be said for their work. So, too, upon the College farm and nursery, the constant effort has been to establish certain facts, methods of grafting, planting, applying manures, and the value to the State of a great variety of plants.

If every day and year were like every other day and year, and every lump of soil like every other bit of earth, then one year would be all the time needed to establish most agricultural facts. But having existed as an Agricultural College little more than three years, that we have not revolutionized Kansas agriculture is about as surprising as that a crop of apples is not usually harvested the same year that the seed is placed in the ground.—[Prof. Shelton.

The Facts in the Case.

In a nut-shell, the facts respecting the Agricultural College are these: With a change of administration in 1873 came a radical and complete change in the methods by which it is sought to give an education of practical value to those who design to be farmers, or mechanics, or self-supporting women. These methods are based upon the principle that if, on graduation, a student finds that he can better use the knowledge he has acquired on the farm than in a profession, he will as a rule become a farmer. Accordingly, the course of instruction is framed with sole reference to the worth of the knowledge it imparts to the working farmer. Every male student in the College is following this course. It has been in operation two years; and we are just as certain as we ever were of anything that long before it has been tried six years the evidence will be so full and clear that all will admit the soundness of the principle upon which it rests and its efficacy. We are fully satisfied upon that point now.

Another fact, which is universally admitted by all who are conversant with the Agricultural Colleges of the United States, is that the one in Kansas is more practical and promises better success than any other—the evidence of which is found in the effort made by the farmers of Iowa, Illinois, Michigan, Ohio, California and other States to have their Agricultural Colleges shifted over to its plan; and several of these have already adopted many of the features first introduced here.

That the Institution has many imperfections is unquestionably true, and we could point out more of these than any body else; but that these imperfections arise from want of funds and the shortness of the time in which the present methods have been tried, and not from a wrong aim or from laxity in effort to hit the mark, is also true. If an

orchard can't be made to yield a full crop in two years, it is not singular that a College cannot.

A final fact is that if the Ways and Means bill becomes a law, the Institution will be able to take care of itself hereafter, till further buildings are rendered necessary by a greatly increased attendance of students. Ninety-nine of every hundred farmers who have carefully examined the College are fully satisfied that it is giving a more sensible and usable education than any other in the country; and that the vast majority want it sustained is unquestionable.

Galloways vs. Short-Horns.

Well-nigh every visitor at the College farm raises the question, "What is the use of these Galloway cattle?" The stock records of the farm it seems to us answer this question most satisfactorily. Every one who notices critically the cow of this breed — the only one owned by the College — acknowledges that she is unusually thick-fleshed, light in bone and offal, and especially well-developed in the most valuable parts. This Galloway cow weighs twelve hundred pounds and she now suckles a good calf three months old. In the adjoining stall is a Short-horn cow, the same age as the Galloway, with a calf not two weeks older than the Galloway's. This Short-horn cow weighs fifteen hundred pounds, but she is not as thick-fleshed as the Galloway and the fat is put on in lumps instead of being spread evenly through the lean, as in the case of the Galloway.

Now, as to the use of the Galloway. This Galloway cow keeps in this beautiful condition with considerably less hay than the Short-horn; while of corn meal, she receives just one quart per day. The regular feed of the Short-horn cow, on the other hand, is four quarts of this same meal per day. Again, our Short-horns, two years old, weighing less than this Galloway cow and having no calves to suckle, require twice the meal of the Galloway without equaling her in flesh.— [Prof. Shelton.

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 24, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

Owing to our early issue this week the meteorological report does not appear.

Col. Spivey and wife, of Salina, made the College a visit the other day. Glad to see them.

The Farmer's Institute began at the court-house Tuesday evening. Quite a good attendance is reported. We were pleased to notice some of the friends looking at the College farm, buildings, etc.

Prof. Platt received the sad intelligence last Sunday of the death of his mother. The funeral took place on Monday, and the remains were sent to her old home in Illinois. The Professor has the sympathies of his large circle of friends in his bereavement.

Sometimes we are a little behind time with our paper, but this week, on account of Washington's birthday, we are two days ahead. This gives our readers the benefit of news, announcements, etc., concerning some matters of interest that may be out of place by Saturday.

E. C. and R. N. Frizzell have lately joined the Alpha Betas, and have consented to use their violins at the drama, Friday night, in connection with Mr. Platt as organist. This is their first public performance here, but no one need fear that the music will be below "A, No. 1."

The programmes for the Alpha Beta entertainment are out, and give the particulars. Since the notices of last week it has been determined to present the plays for two nights, February 22d and 23d. The Messrs. Frizzell and Platt will furnish music for Friday evening. Go early.

Judge Brewer will commence his lectures on Practical Law, Tuesday, March 6th. The lectures will be delivered to the entire body of students, beginning with the first hour for the first lecture, the second hour for the next, and so on. Any and all persons outside the College who desire to hear the Judge, and also find out what kind of law is taught, are invited to attend.

Not very much can be done at farm work during the winter months, but this warm weather brings thoughts of spring, and the plows will be at work on our farm before this issue of the INDUSTRIALIST reaches its patrons. Just what the programme for next season is, we are not as yet informed, but will keep our readers posted from time to time regarding the work being done.

During the week there has been a very large number of visitors at the College,— persons from all parts of the State. It is really pleasing to see several of the citizens of Manhattan showing their friends through our various departments, and that with apparent pride. Criticism where criticism is due, and praise where praise is due, is all we ask for what we endeavor to do in any particular.

The class in Household Economy has this week gotten fairly to work in the new kitchen laboratory. We saw them this morning for the first time in their new quarters, making yeast, bread, pastry and "setting table." It was business every minute, and we are far more than delighted with the present progress and assured promise of complete success in this very extensively "lost art."

We hereby and hereon most solemnly and sincerely return thanks to D. A. Beamer, Brown county, W. P. Burnham, New Mexico, Irving Todd, Riley county, W. S. Fraunberg, Labette county, C. J. Reed, Pottawatomie county, and W. C. Howard, Riley county, for extra and effective aid in getting out the INDUSTRIALIST ahead of time. The first four gentlemen set all the inside type in four and one-half hours. Reed is pressman and Howard has trotted out the locals. When it wants to have a holiday this office can just "rush 'em."

We are indebted to last week's *News* for the following locals:

Last Wednesday was St. Valentine's Day in this vicinity, and it was observed by the circulation of a few gems of art among the students. On the whole, however, we thought the old saint rather neglected.

We were surprised at the large attendance at the students' prayer-meeting last night. Prof. Platt and the students are doing a noble work these Friday evenings, and our heartiest sympathies are with them.

The students are taking a good deal of interest in the society of Sons of Temperance, which holds its meetings in town every Tuesday evening. Many students are members, and new recruits are numerous.

Legislative Appropriations.

By request we republish the following statement of the appropriations asked for the Agricultural College by its Regents, of the sums allowed by the Joint Ways and Means Committees, and of the amounts "cut:"

FOR THE YEAR 1878.

For what purpose.	*Asked for by Regents*	*Allowed by Ways and Me'ns Com*	*Cut.*
For Practical Agricultural building	$12,500	$12,500	
For seeds, experiments and cabinet and equipment for Farm Dep't	500	.....	500
For stock, experiments and cabinet for Hort. Dep't	300	.....	300
For moth-proof cases and cabinet for Entomological Dep't	250	.....	250
For philosophical and chemical apparatus	750	.....	750
For tools and material for Mechanical Dep't	200	.....	200
For machines and material for Woman's Industrial Dep't	300	.....	300
For type, material and instruments for Printing and Telegraph Dep'ts	300	.....	300
For equipment and material for Drawing, Mathematical and English Dep'ts	300	.....	300
For library	1,000	.....	1,000
For Farm house	3,000	.....	3,000
For insurance	500	.....	500
	$19,900	$12,500	$7,400

FOR THE YEAR 1877.

For what purpose.	*Asked for by Regents*	*Allowed by Ways and Me'ns Com*	*Cut.*
For the payment of college warrants due in 1876, and accrued interest	$ 6,813 20	$ 6,813 20	
For the payment of college warrants falling due in 1877, and closing out the debt,	4,188 46	4,188 46	
For the erection of a stone barn for Farm Department	4,000 00	4,000 00	
For seeds, exp'rimn'ts, cabinet and equipment for Farm Dep't	800 00	300 00	$ 500
For greenhouse, stock, cabinet and experiments for Horticultural Department	1,000 00	.....	1,000
For moth-proof cases and cabinet for Entomological Dep't	750 00	250 00	500
For philosophical and chemical apparatus	750 00	500 00	250
For additional tools and material for Mechanical Dep't	500 00	300 00	200
For machines and material for Woman's Industrial Dep't	300 00	300 00	
For type and material for Printing Dep't	200 00	200 00	
For instruments and material for Telegraph Dep't	150 00	150 00	
For models, material and instruments for Drawing, Mathematical and English Dep'ts	500 00	.....	500
For finishing College and Mechanical buildings	1,000 00	1,000 00	
For sidewalks	750 00	300 00	450
For library	1,000 00	.....	1,000
For fire extinguishers,	500 00	500 00	
For insurance	500 00	.....	500
	$ 23,701 66	$ 18,801 66	$ 4,900

It will be seen that of the amount allowed by the Committee for 1877, $11,001.66 are for the payment of the debt, $5,000 for buildings, and $2,000 for the equipment of departments. For the year 1878, $12,500 are allowed for the erection of a Practical Agricultural building, and nothing for departments. These appropriations are for two years, and the sharp and glittering point which terminates their tail is that while the Committee is willing to aid departments in 1877, it is determined that they shall take care of themselves in 1878 whether they can or cannot. If the bill passes, we believe the College will be able to take care of itself before another Legislature meets; if not, it will be seriously crippled.

A Thorough and Direct Education for the Farm, Orchard, Shop and Store.

The Annals of Kansas, by Daniel W. Wilder. Published by Geo. W. Martin, Kansas Publishing House, Topeka. Price $5.

Telegraphy.—Four miles of line, twenty-five line instruments, and daily instruction and drill by an experienced operator.

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American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

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Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

Home Record, Leavenworth, Kansas. Established in 1872. Is the organ of the Home of the Friendless, an Institution founded and controlled by the women of the State of Kansas. Circulation, 3,200. No better medium for advertising in this section. Mrs. C. H. Cushing, Editor. 44-3m

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial Pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; in Book-Keeping and Practical Law. Words, numbers and lines are the tools used by all industrialists in conveying or preserving ideas; and our endeavor is to make the student a ready workman in the art of using these tools for practical purposes, rather than to make him a critic of fancy English or a professor of abstract Mathematics.

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The workshops include those of the Milliner and Dress-maker, Printing, Telegraph, Scroll-Sawing, Carving, Engraving and Industrial Music.

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No contingent fees, except for use of pianos and organs in the Musical Department; and a charge of $1.00 per month for material and instruments used by male students in Printing and Telegraph Departments. Boarding ranges from $2.75 to $4.00 per week.

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For further information, apply to

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, MARCH 3, 1877. No. 46.

THE INDUSTRIALIST.
Published every Saturday by the
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A New Text-Book.

THE ELEMENTS OF AGRICULTURAL GEOLOGY, for the Schools of Kansas, by Wm. K. Kedzie, M. S., of the Kansas State Agricultural College. Cincinnati: Wilson, Hinkle & Co.

TABLE OF CONTENTS.

PREFACE.

The preparation of this little work has been undertaken at the very urgent solicitation of the State Superintendent of Public Instruction and of other prominent educational workers. Two objects have been held in view: First, to place in the hands of teachers a book which would enable them to meet the requirements for the "A" certificate as given in Article VI. Section 6 of the Session Laws of 1876, which requires among other things that the applicant shall be familiar with "the elements of geology so far as relates to the manner of formation of soils and their adaptation to purposes of production;" second, to arrange the work for use in the instruction of the pupils of the common schools. To this end it has seemed best to keep the book entirely simple and untechnical in its character and language. Common names are therefore preferred to technical terms, and these last when used will generally be found in parentheses. The wants of Kansas teachers and students have been all regarded, and special attention has been given to the geology, mineral resources, and farm soils of the State.

NOTICE TO TEACHERS.

It will be readily seen that this book has been written with the understanding that an abundance of specimens, both of soils and of the minerals comprising them, are in the hands of pupils pursuing this study. Such specimens are very important, both for a perfect understanding of the subject, and for the interest which they excite in the mind of the pupil. Many of these specimens, both of soils and of the minerals comprising them, can be obtained in almost any locality in Kansas. But in order to assist in this work as much as possible, the writer will undertake to furnish to individuals or school districts desiring them, a complete set of every variety of soil and of every mineral described in this book; charge will be made for the simple cost of making the collections only. Teachers desiring such collections may communicate with the writer at his address.

Kansas may heartily congratulate itself upon the publication of this work. Apart from the fact that it is expressly and wisely prepared for use in our common schools, it has the advantage of freedom from two grave defects which almost universally characterize text-books: First, they are usually overcrowded with masses of details respecting things that are rather matters of curiosity to a scientist than of utility to the student. There is a vast difference between what it is proper for an author to know about the subject, and what it is proper for him to put in a text-book,—the real purpose of which should be to convey practical knowledge to the pupil, instead of serving as a vehicle in which to air the writer's attainments.

A second common defect is that the majority of works on the natural sciences are written in a language which the pupil does not understand, and which he must first master before comprehending the idea sought to be conveyed. Just as the farmer has technical names for animals and farm operations, or as the carpenter has in his trade, so is it necessary that science should employ some technical terms. But the tendency of scientists, and especially pedants, is to employ as little English and as much double-jointed Latin as they can swing their tongues under without injury to their back teeth. And one of the gravest questions in educational circles is whether the people had better learn pigeon-Latin, or the scientists had better talk English. On the principle of majorities, and on the further principle that English is the language of our public schools, we vote for the latter.

Prof. Kedzie has been singularly successful in avoiding these errors. His work is written in plain, vigorous English, and is as free from technical terms as such a treatise can be. It presents briefly and connectedly those facts of geology which are most essential in understanding the formation and composition of soils or the value of building material. It is a new departure in the text-book business, and we predict for it a hearty reception not only in Kansas but in all other States. The preface and table of contents speak for themselves, and we shall refer to the subject again. The work will be issued about the middle of March.

"I Wish I Had Capital."

We do not know the author of the following, but he preaches one of the best practical business sermons to young men that we have read this many a day:

"I wish I had capital," so we heard a great, strapping young man exclaim the other day in our office. We did want to tell him a piece of our mind so bad, and we'll just write to him. You want capital, do you? And suppose you had what you call capital, what would you do with it? You want capital? Haven't you got hands, and feet, and muscle, and bone and brains—and don't you call them capital? What more did God give to anybody? "Oh, but they are not money," say you? But they are more than money, and no one can take them from you. Don't you know how to use them? If you don't it is time you were learning. Take hold of the first plow, or hoe, or jack-plane, or broad-axe that you can find, and go to work. Your capital will soon yield you a large interest. Ay, but there's the rub. You don't want to work; you want money or credit that you may play the gentleman and speculate, and end by playing the vagabond. Or you want a plantation and negroes, that you may hire an overseer to attend to them, while you run over the country and dissipate; or want to marry some rich girl, who may be foolish enough to marry you for your good looks that she may support you.

Shame upon you, young man! Go to work with the capital you have, and you'll soon make interest enough upon it and with it to give as much money as you want, and make you feel like a man. If you can't make money upon what capital you have, you could not make it if you had a million dollars in money. If you don't know how to use bone, and muscle, and brains, you would not know how to use gold. If you let the capital you have be idle and waste and rust out, it would be the same thing with you if you had gold; you would only know how to waste.

Then don't stand about like a great, helpless child, waiting for somebody to come in and feed you, but go to work. Take the first work you can find, no matter what it is, so that you be sure to do it as Billy did his drumming—well. Yes, what you undertake, do it well; always do your best. If you manage the capital you already have, you will soon have plenty more to manage; but if you can't or won't manage the capital God has given you, you will never have any more to manage.—[Boston Agriculturist.

175,000 Texas cattle coming to Kansas.

One farmer in Greenwood county harvested 12,000 bushels of corn last season. He feeds it to stock.

THE INDUSTRIALIST.

SATURDAY, MARCH 3, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

JUDGE BREWER'S lectures on Practical Law will begin Tuesday, March 6th, 1877.

The Farmers and the Grasshopper.

If the grasshopper raids of the last three years taught our farmers no practical lesson, then have they been a calamity indeed. Within the past four months, we have seen some scores of plans for "exterminating the grasshoppers," but we do not remember having seen a single suggestion as to the course of cropping that will be least affected by the pests. We respectfully submit that no plan that has yet been proposed — not excepting the "legislative action" so loudly clamored for in certain quarters — will materially lessen the number of our insect enemies the coming season. But it is within the power of every farmer to so shape the operations of the season that he will be exposed least or most, as he desires, to the depredations of the grasshoppers. This fact we believe our experience of the past three years conclusively proves.

In 1874 grasshoppers and drought combined completely destroyed the corn crop, but wheat and oats were generally an excellent crop. In 1875 wheat and small grains generally were badly injured, but corn made a fair crop. Again, the visitation of last fall was a terrible scourge to wheat farmers alone, and the prospect now is that small grains will suffer most the coming season.

Now the farmer who in 1874 had devoted nearly equal parts of his farm to wheat, corn, oats and barley, lost his corn crop it is true, but beyond this he was uninjured. And it is doubtful if this loss was not nearly or quite compensated by the increased value of wheat, oats and barley, caused by the general failure of the corn crop. 1875 and 1876, again, have been disastrous only to the specialist. For the farmer who produces all of the standard Kansas farm products, these have been years of substantial prosperity.

It looks very much as though we had not yet received the full benefit of the lesson taught by these grasshopper plagues. Prior to 1874 corn was king, and it required two disasters along the whole line to dethrone him. Since then we have discovered that winter wheat is the great Kansas staple, and it requires but a modicum of the gift of prophecy to see what will be the outcome of this mania.

We notice that a large number of meetings are to be held in different parts of the State within the next two weeks, to consider the "grasshopper question;" and, after all the various schemes for ridding us of the pests, including "ditching," "legislative action," "birds," "burning the prairies," etc., etc., have been properly discussed, we should like to propound to these assemblies this sort of a conundrum: Supposing we are to have grasshoppers every year, what number and kind of live stock and what course of cropping will give the best returns with the least injury to the soil?—[Prof. Shelton.

About Alfalfa.

We take this means of answering a large number of letters recently received concerning the above-named plant.

1. Use only California or western-grown seed. This we have obtained from San Francisco for two years past, at a cost of twenty-two cents, laid down in this city. Sow, without other grain, at a not less rate than twenty pounds per acre.

2. As to the soil. This should always be land which has been some time in cultivation, and it is especially necessary that the subsoil be open and porous. Success may not be expected upon land having a heavy, tenacious subsoil.

3. Prepare the soil thoroughly by plowing and harrowing, as for wheat, and harrow lightly after seeding.

4. Sow about the time at which oats and barley are usually sown, say early in April.

It ought to be borne in mind, too, that during the first summer alfalfa makes a slow and very feeble growth. At this time it is easily injured, and frequently entirely ruined, by weeds. Therefore, in selecting the soil for alfalfa, care should be taken to secure a piece of land that is free from weed seeds. In Europe alfalfa is generally sown in drills and carefully hoed during the first summer. After this time it completely occupies the ground, and will completely smother weeds of all kinds. During the first season it ought not to be pastured or mowed, at least, till late in the season.—[Prof. Shelton.

DURING the week there has been a very large number of visitors at the College,— persons from all parts of the State. It is really pleasing to see several of the citizens of Manhattan showing their friends through our various departments, and that with apparent pride. Criticism where criticism is due, and praise where praise is due, is all we ask for what we endeavor to do in any particular.—[*Industrialist.*

Because the Agricultural College has ceased to be a "mere high school for Manhattan," and become in fact an "industrial" college, not a few of our people have given it the cold shoulder. This is very bad policy. Every one interested in the prosperity of this locality should do all in his power to help the Institution along. If it continues to progress on the line it is now pursuing, it will remain here and add greatly to the wealth of the community; but if it ever goes back to the old system, it will undoubtedly be consolidated with the University. Those who imagine that "the buildings would hold it" should remember the fate of the Emporia Normal school. Its $50,000 building did not save it. A word to the wise, etc.—[*Nationalist.*

Sheep-Raising in Kansas.

You will permit me to say a few words in your valuable paper on this important subject in the great State of Kansas, having lived in Vermont, then Wisconsin, and the last few years in Kansas.

I must say that I think Kansas is the best State in the Union for raising wool, taking everything into account. Our winters are short, country rolling, many parts even hilly; good pure water; genial climate; one-half the hay and grain will feed the same amount of sheep that it takes in Ohio, Michigan or Missouri.

If sheep are taken from the North, they should be taken in October, November or December. In this way they may become acclimated. What surprises me is that the people of Kansas don't go into sheep-raising more, wool being a staple article and always in demand. It is easily transported at a little expense. The State ought to produce five to ten million pounds annually.

She has not probably over one hundred thousand sheep at this time, while Colorado has over five hundred thousand, if reports are true,— not half as good a State, in fact no comparison for producing this great staple, for the reason that the country will not produce even tame grass, corn, &c. I have seen hay worth $50 per ton in Denver, and $100 per ton in the mountains, while in Kansas it is from $2 to $4 per ton.

Colorado is very uncertain in regard to winters; sometimes they are mild, then very severe, and fearful storms. More than all, the alkali injures the staple, and there is no character to the wool,— it is more brittle and undesirable. This fact is undeniable.

Kansas is a large State, having eighty-seven thousand square miles; has railroads running in all directions over the State; a diversity of soil; no better wheat, corn or fruit State in the Union; the past year gives evidence of the fact; she has the best yield of wheat and corn of any State in the Union and of the very best quality.—[*Prairie Farmer.*

Good Morning.

Don't forget to say good morning! Say it to your parents, your brothers and sisters, your school-mates, your teachers,— and say it cheerfully and with a smile; it will do your friends good. There's a kind of inspiration in every "good morning" heartily and smilingly spoken, that helps to make hope fresher and work lighter. It seems really to make the morning good, and to be a prophecy of a good day to come after it. And if this be true of the "good morning," it is also of all kind, heartsome greetings. They cheer the discouraged, rest the tired one, and somehow make the wheels of life run smoothly, Let no morning pass that you do not help to brighten by your smiles and cheerful words.

The average slope or descent of Kansas is seven and one-half feet to the mile, from northwest to southeast.

There are $500,000 invested in cows in the United States. The estimated value of butter that can be produced from a first-class cow is $94; while a common cow will produce from $30 to $40 worth.

There is no uncertain future for Kansas. In the heart of the Union it is destined very soon to rank among the richest of States. As her history has been glorious, so will be her entire career. It has a magnificent school fund and nearly out of debt. Population, 600,000.

THE INDUSTRIALIST.

SATURDAY, MARCH 3, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

The Students' Column contains several items which were crowded out last week by news of more importance.

The foreman of the farm is away for a short time, and J. S. Griffing, Jr., of the Senior class, is acting as head manager.

Several of the students are expected to take part in the temperance meeting, at the Presbyterian church, to-morrow evening.

The road is being turnpiked along the hill between College and town, corn-stalks being cut, and farm work in general commencing.

The boys have re-organized the Bluemont Base-Ball Club. They will play their first practice game next Saturday, near the fair grounds.

C. S. Buell and sister were very much rejoiced at the arrival of their mother and brother a few days ago. They hail from Binghampton, New York.

Misses Kate Hoyt and Lizzie Haines are opening a dress-making establishment in Manhattan. Miss Hoyt was a member of the sewing class when she attended this Institution.

The Farmers' Institute, held in Manhattan last week, was quite well attended, and proved a pleasant and profitable gathering. We noticed our Faculty pretty well represented on the programme of exercises.

Chas. P. January has gone to Kansas City, Mo., to work in the daily *Times* office. Henry Patee started for Annapolis this week, expecting to enter the U. S. Naval Academy. Arlie Wood is attending the St. Mary's school.

According to the *Kansas Farmer*, Noble L. Prentis will deliver his lecture on "Pike and Pike's Peak," in Manhattan, on Thursday evening, March 8th. Those students who desire to gain information, hear good sense, and enjoy real wit, will avail themselves of this opportunity to hear a popular lecturer.

Among the visitors at the College this week, we recall the following: Ex-Senator Caldwell and wife, with Miss Caldwell, Mrs. E. B. Purcell, and Mrs. N. A. Adams, of Manhattan; Mr. G. W. Lewis, of Chetopa, Labette county, father of our young telegrapher, Ira H. Lewis; Mrs. Griffin, of Lawrence, teacher of Kindergarten school; and Miss Carrie Reed, of St. Clere, Pottawatomie county, sister of C. J. Reed, one of our students.

The *Nationalist* speaks in very complimentary terms of the entertainment given last week by the Alpha Beta Society. As usual with this Society, its programme was a good one, was well played, and nothing appeared that could offend any one. Manhattan will always give this Society's entertainments a full house, and we guarantee they will never be disappointed in expecting a first-class performance.

The Alpha Beta entertainment came off as advertised, notwithstanding the very disagreeable weather of Thursday. It rained all through the first evening, but the audience was a good one. Friday evening was more pleasant, and the hall was full. They will realize about thirty dollars for the library.

If space would permit we would particularize as to characters, but a general mention must suffice. All did better the last night than the first. "Scraps'" whiskers made him an old man sure enough. We heard it remarked that surely a certain young lady doesn't know how nice she looked and—but we must not excite pride. Burnham shown brightly—a splendid player. Griffing was good in each of his characters. G. H. Failyer represented a rich old merchant with a degree of naturalness surprising; and Geo. Platt did his part so well with his "burnsides" that his friends didn't recognize him at all. Ward,—well, you should have seen him, especially in that "primitive habiliment!" And Beamer was determined to win that widow anyhow. We haven't seen a better "Aunt Betsy" than Miss Child for—well, never. Anybody could see how much better it is to be one's self, if he paid close attention to "Scraps'" courting venture and the afterpart of it.

The Society is under many obligations to the Manhattan String Band for music the first night, and to the Messrs. Frizzells and Platt for music the second night. We heard several compliments regarding the music of the second night; of course, the Society is glad to have members who can carry so necessary a part as music in so able a manner.

Owing to circumstances beyond the Society's control, we suppose Mr. Failyer's speech of thanks was not heard; however, the Society is very thankful for the patronage received. H.

A paper is circulating among the members of the Webster Society with the aim of securing the contribution from each member of some book or books for the Society library.—[*News.*

Students' Column.

The meeting of the Websters on the evening of the 17th was quiet and orderly, and the question, "*Resolved*, That married life produces more happiness than single," was decided for the affirmative. The question for next week is that the Indians have more rights than the white man to America.

Next Saturday evening, after debate, the moot-legislature will be organized. This promises to be a most interesting and valuable addition to the exercises of the Society.

A withdrawal card was granted Mr. January at this meeting. He takes leave of his fellow-members with many expressions of good will.

REPORTER.

The Alpha Betas always have something interesting. You will be well entertained if you attend their meetings. At the last meeting considerable excitement was manifested under extemporaneous speaking. Whether conscience is a guide, was the the question under consideration. Although the negative was well sustained, the affirmative had rather the better of it.

The regular debate was on the relative merits of schools admitting both sexes and those admitting but one. The judges decided that those favoring mixed schools produced the better argument.

The Society is making arrangements for first-class instrumental music at its sessions. Hope members belonging to the singing class will favor us with vocal music occasionally.

Two more new members at last meeting. The Society is filling its library with choice books, and, being the leading Society connected with the College, students consult their interests by joining it.

ATEB.

The Websters last Saturday debated the question, "*Resolved*, That the Indian has more right to American soil than has the white man." It was decided for the affirmative.

The committee on books reported upwards of forty volumes received, and more promised. Among these there are several very valuable ones presented by Senator Harvey, for which the Society returned a vote of thanks.

The Society organized the moot-legislature this evening. The members selected the districts they wished to represent, and the rules of order of the Senate were read.

REPORTER.

On last Friday, the 23d ult., there were a goodly number of Alpha Betas at their hall, notwithstanding the extra outside work incident to their entertainment. The metaphysicians of the Society were rather quiet on that occasion, while the more practical portion of the members told us what they knew about the nobility of farming.

Mr. A. H. Stiles read a very interesting essay entitled, "Agreeing to Differ." Mr. Quinby, an old member of the Society, responded to the call of the members with some very sensible remarks. He urged all to profit by the opportunities presented by the Society. They would not properly appreciate their present advantages until deprived of them as he is. We always feel encouraged and pleased to see old members among us again.

Next meeting we shall probably have some good music. All are invited to attend our sessions.

ATEB.

The Atchison Champion.—Daily and weekly. Weekly established, February 3d, 1855. Daily established, March 22d, 1865. The oldest and the leading journal of Kansas. Jno. A. Martin, Editor and Proprietor.

During the past month the weekly *Champion* entered upon the twenty-third year of its publication, and on the 28th of the month will enter upon the twentieth year of its publication under the proprietorship of its present editor and publisher. The daily *Champion* will, on the 22d of March, enter upon the thirteenth year of its publication.

The *Champion* was established in February, 1855. It was then called the *Squatter Sovereign*, and was an intense pro-slavery paper. It was purchased in 1857, by a company of Free State men, who continued its old name until February 1858, when the present proprieter purchased the establishment, changed the name of the journal to that of the *Champion*, and has ever since been its proprietor. From that time until the present, this journal has devoted all of its influence, energy and ability to making known the advantages, resources and wants of Kansas. Its circulation exceeds that of any other journal in the State. It publishes more reading matter every day and week, fuller telegraphic dispatches, more complete market reports, and a greater and better variety of news than any paper published in Northern Kansas. It has an established business, hosts of old and true friends and patrons, and advantages in obtaining early and correct intelligence superior to those possessed by any other journal in this section. And its proprietor will in the futnre, as he has in the past, utilize all the resources at his command to constantly improve the journal whose success and prosperity is his highest ambition.

The *Champion* is owned and controlled solely by its editor. Its position is absolutely independent. It has no interest to serve except the interests of the people, and it will be at all times a conscientious and honest advocate of all measures calculated to promote the prosperity of all classes, and an unyielding opponent of whatever conflicts with the well-being of the public.

The *Champion* is the only paper in Atchison or Northern Kansas that belongs to the Associated Press, or that receives full and reliable telegraphic reports. It publishes, each morning, an account of every event of importance transpiring during the previous day in any part of the civilized world. It also furnishes full and reliable market reports received by telegraph, giving the previous day's quotations in New York, St. Louis, Chicago and other eastern cities.

Attention is especially directed to its remarkably interesting and valuable letters from the State Capital during the sessions of the Legislature. These have never been equalled in fullness of detail, vigor and independence of criticism, and general interest, by the correspondence of any other journal in the State.

The *Champion* is Republican in politics. It has always been, and it expects to continue its advocacy of the principles of that party in the future. It has faith in the progressive policy of the Republican organization, and that it will continue to deserve the support and confidence of the best and most intelligent people of the country by the position it assumes upon all questions affecting the welfare and happiness of the people or the liberty and honor of the Republic.

After nineteen years of assiduous effort on the part of its proprietor, the *Champion* is established on an absolutely sound and permanent basis, which no possible contingency can effect. That the people, not only of this city but throughout the State, appreciate his endeavor to build up a first-class journal, is evidenced in the extent of the patronage given the *Champion*.

We are always glad to hear from the people, and to discuss topics which interest them. Our columns are always open and ready to welcome their communications, for we aim to make the *Champion* emphatically the people's newspaper. Correspondence on any and all topics of general interest is solicited, from any and all parts of the State. Letters detailing facts in relation to the growth and development of the country or towns, or communicating intelligence respecting the crops, industries, manufactories, commerce, or current events in any part of the State, are especially invited.

Terms, postage prepaid.—Weekly, per annum, $2.00; in clubs of ten, (in advance,) $1.50. Daily, per annum, $10.00; six months, $5.00. Daily, delivered by carrier, (per week,) 25 cents.

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The Annals of Kansas, by Daniel W. Wilder. Published by Geo. W. Martin, Kansas Publishing House, Topeka. Price $5.

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Manhattan Bank.—E. B. Purcell, Banker; Jno. W. Webb, Cashier; Geo. S. Green, Attorney. A general banking business transacted. Bills of Exchange issued on all principal cities and towns of Europe. All collections have the personal, faithful and prompt attention of our attorney. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

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KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

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Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

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Expositor. Concordia. Only home paper in county. Large circulation. Large patronage. Independent. $1.00 a year. J. S. Paradis, Editor and Proprietor. 33

News, Girard, Crawford coumty. A Democratic weekly paper published at the county seat of Crawford county, $1.50 per year. Tipton & Lamoreaux, Editors.

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

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Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Independent. Minneapolis, Kansas. Established 1871. The oldest, largest and cheapest paper in the beautiful Solomon Valley. Price $1.50 a year. Politics, independent but not neutral. W. Goddard, Publisher. 43-3m

---

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

---

Home Record, Leavenworth, Kansas. Established in 1872. Is the organ of the Home of the Friendless, an Institution founded and controlled by the women of the State of Kansas. Circulation, 3,200. No better medium for advertising in this section. Mrs. C. H. Cushing, Editor. 44-3m

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KANSAS STATE AGRICULTURAL COLLEGE.

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial Pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; in Book-Keeping and Practical Law. Words, numbers and lines are the tools used by all industrialists in conveying or preserving ideas; and our endeavor is to make the student a ready workman in the art of using these tools for practical purposes, rather than to make him a critic of fancy English or a professor of abstract Mathematics.

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Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the Structure, Growth, and Value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, in the Wood and Iron Shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

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The course of study for woman is more practical, and, therefore, more sensible than that found in any other institution in the United States. The studies are shaped with reference to the liberal and direct education of woman as a woman instead of as a man, and as an industrialist instead of a butterfly. Among the special features of the course are Physiology and Special Hygiene, Household Economy, Farm Economy, Gardening, Household Chemistry, etc.

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Superior advantages are offered to students of higher Chemistry, to Mineralogists, Druggists, Operators, and Workers in metals.

Full collections of the Plants, Insects and Birds of Kansas, are being made as rapidly as possible.

☞ TUITION ABSOLUTELY FREE! ☜

No contingent fees, except for use of pianos and organs in the Musical Department; and a charge of $1.00 per month for material and instruments used by male students in Printing and Telegraph Departments. Boarding ranges from $2.75 to $4.00 per week.

CALENDAR:—Winter Term began Thursday, January 4th, 1877, and closes May 23d, 1877.

For further information, apply to
J. A. ANDERSON, President.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, MARCH 10, 1877. No. 47.

THE INDUSTRIALIST.
Published every Saturday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Agriculture at Wholesale.

A correspondent of the *Country Gentleman*, writing from Burr Oaks, Ill., thus describes a large farm in his neighborhood:

Here, the station of the Chicago & Paducah railroad, I believe, is the geographical centre of Mr. M. L. Sullivant's farm—"a farm as is a farm," whether considered regarding the extent of domain or its aggregate products. M. L. Sullivant was born at Franklington, O., Aug. 6th, 1807; educated at Ohio University and Center College, Ky. The design of his parents to establish him in a profession was frustrated by an unalterable wish of the son to render famous the avocation that is indispensable to the world, and the true producer of wealth. He was noted as a farmer of some thousands of acres near Columbus, O., and, I think, on the famous Scioto bottoms, for some years previous to 1861, and has been an importer of blooded neat stock. In 1844 he purchased, mostly from the government, in Illinois, 80,000 acres of land. In 1861 he commenced farming operations on 22,000 acres at Broadlands. In 1868 he sold Broadlands to Mr. Alexander, a famous stock-grower and dealer, for a quarter of a million of dollars (Mr. Alexander, I believe, died last fall), and began transactions on his present farm at Burr Oaks, planting 1,000 acres in corn the first year. The next year he planted 5,000. In 1870, he planted 11,000; in 1871, he planted over 11,000 acres in corn and over 5,000 acres in other crops. It is said that at one time his united corn cribs, 12 feet wide and 8 feet high, would extend nearly five miles. His largest corn field was about 25,000 acres. He has given employment at one time to about 185 men. His lowing herd numbers 250 head, swine aggregate 500, and has had at once about 500 mules and 40 horses. About 40 of his finest mules were burned in a barn a few weeks ago.

Burr Oaks farm is eight miles square, and of course comprises sixty-four sections, which is something over forty thousand acres. Its superficial area is beautifully undulating, and the soil is very deep, and marvelously rich and productive. It is the choice land in a wide extent of country. The grove of burr oaks, which gives the name to this great farm, and the railroad station about a quarter of a mile from the proprietor's residence, is near the center of the farm. Here, under its lea, is the residence of Mr. Sullivant, which is rather a group of plain, unostentatious buildings, than a single one, and seems to have been built at various times, and as the needs and conveniences of the family required. The whole is regarded as temporary, to be vacated when the pressure of business relating to the conduct of the farm shall be so relieved as to permit the proprietor to turn his attention to the erection of an edifice comporting with his wishes. Here, too, are quite a number of other buildings: the "grand central"—the general boarding house, the principal office, the store, post-office, private office, blacksmith shop, wagon reparing shop, sundry small dwellings for employees, store-houses, barns, cribs, &c. Then there are as many as nine sub-headquarters, situated in such localities on the farm as accommodate the laborers in tilling the soil, and designated by numbers from 1 up to 9. At each of these headquarters is quite a group of buildings, such as dwellings, barns, cribs, &c.; and each one has a superintendent. Then there are dwellings at various points distinct from these headquarters, to accommodate renters. There is a large nursery on the farm, of shade, ornamental and fruit trees.

The reader will have inferred that, under the direction of the proprietor, there are two or three book-keepers, a general superintendent, and a man employed more or less of the time to replenish (by purchase) the stock, or to dispose of the surplus of the same, when such a fact shall occur. There are in the stable at Burr Oaks four Shorthorn bulls, and in the pens several animals of the best breeds of swine. The reader may also have anticipated another fact, that agricultural implements have come to the Sullivant farm by the car load.

It appears that Mr. Sullivant's ambition is gratified. I think he has cultivated the largest number of acres of corn of any man on this continent. Mr. ——— (his name I cannot recall just now), of California, has grown 40,000 acres of wheat, but Mr. S. is the king in corn cultivation, I think. His fame has extended over to Europe, but not to the Appletons, it seems, for the revised Cyclopedia does not contain his name. Mr. Terentius Varro lives in history not only because he was the "most learned of the Romans," but because he was a farmer, and gave his best efforts in a literary way to his work on agriculture. We have fallen on other times, for the successful man on the farm—the hero of the indispensable, wealth-producing, peaceful pursuit of agriculture—now finds no place in our comprehensive repertories of knowledge; but yet I am confident that the name of the proprietor of the 40,000,-acre farm, after his activities on the same have ended, will live in coming time.

Hints to Kansas Immigrants.

In Kansas, flocks and herds pay the best. Winters are dry, often mild, but stock needs good shelter and good care. Hay $2 to $4 per ton. Corn 20 to 25 cents per bushel. At the present prices for fat cattle and hogs, it pays to feed.

In Kansas, flocks and herds cost but little in summer above the cost of herding. Prairie grass is abundant and very nutritious. Streams and springs are many and durable, and in hot weather, cattle left to range on the hills and at the head of ravines, get the full benefit of the prairie breeze, avoid flies, and crop the sweetest, most palatable grasses.

Kansas soil is a deep rich loam, resting upon a subsoil of clay rich in lime, and noted for a provident retention of moisture when rains are not abundant.

Kansas has established a world-wide reputation as a fruit-growing State. Apples grow largest and fairest, and, on account of the rich mineral fertilizers in her subsoil, their flavor is very rich and their color very high.

Kansas is pre-eminently a healthy State. There are, in some seasons, billious attacks along our streams, but upland prairies are very healthy. Invalids of other climes rapidly recover here.—[*St. Mary's Times.*

Farming as a Pursuit.

It is so ordered that man must labor for his support, and he has various pursuits offered him for this purpose. They grow out of his necessities and field of activity for every one disposed to exert himself. Happy he who selects a congenial pursuit, for a love of one's calling is half the battle gained. It not only concentrates thought and action and leads to material prosperity, but it gratifies the inclination, and, what is the basis of all employments, it brings contentment. We should work, then, not to live merely to accumulate wealth, but to enjoy life as well, making the result of our labor contribute to our happiness, the doing and the result harmonizing and combining to bring this about, so that a man gets paid not only for doing his work, but in doing it.

If in love with it, the farmer has superior advantages in his vocation. He lives under the direct influence of nature, surrounded by all her attractions which are engaging and healthy. He has health, enjoyment and material success. What more can he desire? If more is wanted, it may be obtained after a competency is secured, and a home, if he feels disposed to travel, will always await him, such as he hardly finds equaled elsewhere, with its associations and endearments from his growth up. —[*Smith County Pioneer.*

Grass is starting along the streams and in the timber of Sumner county.

Drilled wheat everywhere shows up better than that sown broadcast.

Kansas will place a specimen of her fruit on exhibition in Washington in March.

For two years Kansas wheat has graded higher than any other marketed in St. Louis.

Kansas has taken the premium on fruit in every instance where she has been a competitor.

Three average seasonable years out of five will make Kansas one of the wealthiest States in the Union.

Two hundred and ninety-five distinct species of birds have been found in Kansas, and twenty-five species of fish have been caught in her rivers.

THE INDUSTRIALIST.

SATURDAY, MARCH 10, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

PRESIDENT ANDERSON is at Leavenworth, obtaining plans from Architect Carr for the new barn.

Cultivation of Jute, Hemp, Flax, Etc.

Many well-wishers of the agriculture of this State are urging upon our farmers the desirableness of cultivating such unusual crops as jute, hemp, flax, castor beans, and the like. To such cultivation few objections can be urged, provided these crops have their own proper place in a system, and are not allowed to develop into specialties. The best general rule in agriculture is this: Cultivate no crop that is not in some part valuable as stock food. Taking the years together, that crop will be found most valuable which gives the largest amount of cattle food. It is true that there are occasional exceptions to this, but the exceptions are so few that we are perfectly safe in judging of the value of a crop by this rule. The objection to the extensive cultivation of such plants as the castor bean, flax, etc., is that neither in straw or grain do they furnish cattle food, so that their extensive cultivation banishes stock-raising from the farm. Moreover, they greatly impoverish the soil and return nothing whatever to it. But where these plants are cultivated on a small scale, for the purpose of completing the season's round of labor and for varying the products of the farm, we can conceive considerable advantages in their cultivation.—[*Prof. Shelton.*

Kansas and Improved Stock.

Wealthy eastern men are beginning to understand that no State in the Union possesses equal attractions with Kansas to the breeders of pure-bred stock of all kinds. This is shown by the recent establishment in our midst of such magnificent herds as those of Mr. Albert Crane, Mr. Geo. Grant, Mr. Akers, and numerous others. The steady westward growth of this business is something quite remarkable. Most of us remember when Ohio was the center of this great interest; from Ohio it spread into Kentucky, from Kentucky to Illinois and Missouri, and already the breeding of pure-bred stock has become an important interest in Kansas. That the business is a safe and permanent one in our own State, a glance at our surroundings will convince any one.

We are literally surrounded by the finest natural grazing lands in the world. The stockmen of Colorado, Texas and New Mexico will demand every animal that our breeders can spare; and if the breeding interest were a hundred times stronger in Kansas than it now is, we could not supply this demand.

To young men of moderate means this is a particularly attractive field. It offers a better opportunity for the exercise of skill and judgment with fewer risks than grain-growing, while the profits are immeasurably greater. Whatever may be said of Kansas as a fruit or grain-growing country, no one in his right mind questions the adaptability of this State to the production of live stock. We greatly err in our judgment of the "signs of the times," if the day is not near at hand when Kansas will be the center of that improvement in domestic animals which will ultimately change the character of those vast herds which cover the western plains.—[*Prof. Shelton.*

Appropriations for the Agricultural College.

The following is the appropriation made by the last Legislature for the benefit of this Institution:

Be it enacted by the Legislature of the State of Kansas:

SEC. 1. The following sums are hereby appropriated out of any money in the treasury not otherwise appropriated, to be used under the direction of the Board of Regents of the State Agricultural College: *Provided*, That not over $15,000 of the interest on the endowment fund shall be used to pay instructors or teachers in said College until the debts of said College be paid in full, and until said College shall refund to the State all money advanced by the State to pay for instructors and running expenses of said College: *And provided further*, That said indebtedness to the State may be paid in permanent improvement on the College grounds, under the direction of the Board of Regents:

FOR THE FISCAL YEAR ENDING JUNE 30, 1878:

For the erection of a stone barn for Farm department	$4,000 00
For finishing mechanical and college buildings	1,000 00
For fire extinguishers	500 00
For sidewalks, to be made of stone	300 00
For the payment of the balance of the claim and interest thereon of W. H. Fletcher	1,974 46

FOR THE FISCAL YEAR ENDING JUNE 30, 1879:

For practical agricultural building	$12,500 00

SEC. 2. The several amounts appropriated by section one of this act shall not be used for any other than the purposes therein specifically mentioned, and the Regents of the College shall, in their annual report, set forth an itemized statement of each expenditure under the provisions of this act.

SEC. 3. The Auditor of State is hereby authorized to draw his warrants upon the Treasurer of State for the purposes and amounts specified in the first section of this act, or so much thereof as may be necessary to liquidate such indebtednes, as provided for in this act.

SEC. 4. This act shall take effect and be in force from and after its publication in the Weekly *Commonwealth*.

Approved March 6th, 1877.

I, Thomas H. Cavanaugh, Secretary of State of the State of Kansas, do hereby certify that the foregoing is a true and correct copy of the original enrolled bill on file in my office.

In testimony whereof, I have hereunto subscribed my name and affixed the great seal of State. Done at Topeka, Kansas, the 6th day of March, A. D. 1877.

[L. S.] T. H. CAVANAUGH, Secretary of State.

The Black Polled Cattle.

The following article, written by George Grant, Victoria, Kas., is taken from a late number of the *Country Gentleman*:

In a recent number of your journal I observed that one of your correspondents asked for information in regard to the quality of Black Polled cattle. As I have had considerable experience in the breed, I beg to offer the information asked for, according to my knowledge. The Black Polls have hitherto principally been bred in Scotland, and there are two degrees of the same, namely, the "Galloways" and the "Angus." The Angus breed stands higher for quality of beef than the Galloway. With regard to the quality of the Angus Polled, their beef stands higher in the London Smithfield market, and in the leading markets of Scotland, than either Short-horn or any other breed of cattle, and consequently the beef brings a higher price. As to milking qualities, they are fully equal to the Short-horn. As breeding animals, they are easier fed.

In the past three years I have been using four Polled Angus bulls and six Short-horn bulls of good pedigree, in order to test the results of the respective weights of the two breeds. I shipped one car load of cattle 2½ years old made up half of the Short-horn and half of the Polls. When weighed in the balance, the Polls were on an average one hundred pounds heavier than the Short-horns. My largest herd (about 600, principally of Cherokee and native cows,) have no feed or shelter in summer or winter but what they find on the plains, but they are generally herded where there is natural shelter. The calves are for the first winter fed on cold days, and with one feed when the weather is fine, and are sheltered in open covered sheds.

The Polled Angus bulls are splendid sires, and crossed with the Cherokee or native cows I think the calves are fully ninety per cent polled. A large proportion of them are black, and even when of the color of the dam, they are Polls in form, etc. Should your correspondent L. F. S. come west, I should be happy to entertain him or any other breeder of cattle who takes an interest in the advancement of breeding good beef. Mr. W. Watson, who has the management of Mr. Crane's celebrated herd of Short-horns, Durham Park, Marion Co., Kansas, is perhaps one of the best living authorities on Polled cattle,—his father having been one of the most successful breeders of the Polls in the early history of the breed.

Good Sense.

Good sense, or, what is usually called common sense, is the basis of good taste. It teaches a man in the first place that more than two elbows are highly inconvenient in the world; and, in the second, that the fewer people you jostle on the road of life the greater your chance of success among men and women. It is not necessary that a common sense man should be an unimaginative one; but it is necessary that his imagination should be well regulated. Good taste springs from good sense, because the latter enables a man to understand at all times precisely where he is and what he ought to do under the circumstances of his situation. Good taste is a just appreciation of the relationship and probable effects of ordinary, as well as extraordinary, things; and no man can have it unless he is in the habit of considering his own position, and and planning his own actions with coolness and accuracy.

There are ninety-four banks in Kansas, having altogether a capital to the amount of $2,453,062.

No country possesses superior advantages to Kansas in stock-raising. The dry winters, splendid ranges and low priced lands have induced the profitable investment of a large aggregate of capital, which is being augmented every year.

THE INDUSTRIALIST.

SATURDAY, MARCH 10, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending March 9th, 1877.

DAY OF WEEK AND MONTH.		Temperature. Max.	Min.	Mean.	Bar. Mean	High.	Inches of Rainfall.
Saturday	3	40°	18°	33°		28.89	
Sunday	4	41	29	34		29.06	
Monday	5	43	31	36	.25	29.03	
Tuesday	6	56	26	39	.75	28.60	
Wednesday	7	34	6	26		28.47	.25
Thursday	8	20	3	14	.25	28.70	
Friday	9	28	14	18	.25	28.92	

Average temperature for the week, 28°.78.
Range of temperature for the week, 53°.
Rainfall for the week, .25 of an inch.

Number of students enrolled this term, **173.**

Several new students enrolled since our last issue, and, if we judge from appearances, we should say a little above the average in attainments of practical value.

If you want to spend an evening pleasantly, and if you enjoy good music, you should attend Prof. Platt's entertainment in the College chapel, on the evening of the 22d.

The Mechanical department is making a library case for the Alpha Beta Society. That master mechanic, Mr. T. T. Hawkes, is doing the work, and you may rest assured that it will be well done.

During the week the Farm department has sold to Chas. Moxley, of Madison, Greenwood county, a Devon bull, cow and heifer calf. Mr. Moxley, at a very reasonable price, gets an excellent foundation for a herd of pure-bred animals.

The warm weather of last week gave our blue-grass in field No. 1 a perceptible start. The College farm is now the happy possessor of ten acres of as fine blue-grass seed as can be found anywhere.

During the past week the class in stock breeding has had its recitations in the stock-barn. The work has been to fix in mind the characteristics of the different breeds, the points of each breed, and other practical matters.

The Websters elected the following officers last Saturday evening: President, R. A. DeForest; Vice-President, A. N. Godfrey; Secretary, L. A. Salter; Treasurer, B. Anderson; Marshal, J. H. Harvey; Critic, J. E. D. Williamson.

The past week has been what we call changeable,—a little rain, less snow, more wind, ditto cold, and just now (9th) clear and pleasant. Evidently we are to have storm and cold enough to make up for the very fair days of the winter months.

F. C. Ruland returned to his home in Butler county, last week. During his stay here he made many friends, stood high in the estimation of all as a young man of strict integrity, and not afraid to work his way. We look forward with pleasing expectation to his return as a student next year.

C. S. Buell, formerly from New York but recently of this Institution, has moved on his farm in the western part of the county, intending to put into practical use the knowledge gained here this winter, and to come back for further instruction next winter. That's business, and of a profitable kind.

The Alpha Beta Society has lately received from the East over forty new books for its library; and steps are being taken which will lead to the addition of many more valuable works. The Society has been very fortunate in its endeavors to start a library, and can point with pride to the good beginning it has made.

Since our last report, the following students have been assigned: Hattie Sibrell, Junction City, Davis county; Jerry B. Palton, Wildwood, Rice county; George A. Wake, Wakefield, Clay county; Page Wingrove, Clay Center, Clay county; Oliver M. Wylie, Tabor, Clay county; Helen M. Irish and Gertrude S. Irish, Riley county.

The lecture on "Pike and Pike's Peak," by Noble L. Prentis, was well attended on Thursday evening, at the Presbyterian church, notwithstanding the extremely "balmy condition" of the weather. The lecture was a good one, abounding in historical information, witty sayings, and eloquent passages. The audience showed its appreciation of the lecture by frequent and hearty applause.

Judge Brewer's course of lectures on Practical Law, a continuation of last year's course, was begun last Tuesday and continued during the week. We have not the room nor the time this week to give an extended notice of these invaluable lectures, but will publish a more detailed report of them hereafter. Next week they will be delivered as follows: Tuesday, the fourth hour; Wednesday, the fifth hour; Thursday, the second hour; Friday, the first hour.

The roll of visitors at the College this week contains the following names: Charles Streeter and brother, of Milford, Davis county; H. S. Maynard, Randolph, Riley; Judge D. J. Brewer, Topeka, Shawnee; Senator Hallowell, Baxter Springs, Cherokee; B. L. Kingsbury, Burlington, Coffey; Misses Ella Winne and Belle Pound, Manhattan; Chas. Moxley and son, Madison, Greenwood; T. M. Fowler, Fowler Station, Ind.; Noble L. Prentis, Topeka, Shawnee; Senator Dow with Rev. Brown and Mr. Swaggerty, Berlin, Riley.

Prof. Platt informs us that his singing classes will give another concert in a short time, probably on the evening of the 22d. Those persons who have heard these classes at the College and at the different College entertainments in Manhattan, will read this announcement with pleasure. The proceeds of the concert will be used in paying for an organ which the classes have lately secured. If you want to hear good singing, in the shape of loud choruses, pleasing quartettes, and funny duettes, come to the College chapel on the evening above-named, unless otherwise notified. Admission, twenty-five cents.

The temperance meeting at the Presbyterian church last Sunday evening was well attended; indeed, it was the best audience we have seen for a long time. The exercises were varied and interesting. Speakers from Zeandale, St. George, Wild Cat, Manhattan and the College took part; and each one had something of value. Appropriate music was furnished by a selected choir, most members of which belong to the Manhattan Division of Sons of Temperance, under whose auspices the meeting was held. Certainly the temperance cause is a noble one, has the support of all christian people, and in its workings here thows additional security around our College students.

The INDUSTRIALIST, the organ of the Agricultural College at Manhattan, and printed by the students, is one of the best papers, typographically, in the State.—[*Pawnee County Herald.*

Last week's meeting of the Alpha Betas was opened by music on the organ by G. L. Platt, and on the violin by Messrs. E. C. and R. N. Frizzell. Those who have heard these gentlemen play will know that it was a rare treat. To those who have not heard them we can only say, come and hear them if you enjoy good music.

The regular debate was on the question whether what is thoroughly learned can be entirely forgotten. The decision was in favor of those who said "not" to the above proposition.

Under extemporaneous speaking the merits and demerits of the herd law were brought before us; also the advantages of the study of history were mpressed upon us by some who grew eloquent as they saw, in imagination, ancient heroes and philosophers looming up before them. Then followed the reading of the paper. Owing to the sickness of one of the editors but half of the paper was read; but it was very good. The other half will be read this week.

The Society's books have come and they justly feel proud of them. The session closed with music. We find this an excellent means of smoothing the ruffled tempers of disputants. Visitors always welcome.

ATEB.

The Atchison Champion.— Daily and weekly. Weekly established, February 3d, 1855 Daily established, March 22d, 1865. The oldest and the leading journal of Kansas. Jno. A. Martin, Editor and Proprietor.

During the past month the weekly *Champion* entered upon the twenty-third year of its publication, and on the 28th of the month will enter upon the twentieth year of its publication under the proprietorship of its present editor and publisher. The daily *Champion* will, on the 22d of March, enter upon the thirteenth year of its publication.

The *Champion* was established in February, 1855. It was then called the *Squatter Sovereign*, and was an intense pro-slavery paper. It was purchased in 1857, by a company of Free State men, who continued its old name until February 1858, when the present proprieter purchased the establishment, changed the name of the journal to that of the *Champion*, and has ever since been its proprietor. From that time until the present, this journal has devoted all of its influence, energy and ability to making known the advantages, resources and wants of Kansas. Its circulation exceeds that of any other journal in the State. It publishes more reading matter every day and week, fuller telegraphic dispatches, more complete market reports, and a greater and better variety of news than any paper published in Northern Kansas. It has an established business, hosts of old and true friends and patrons, and advantages in obtaining early and correct intelligence superior to those possessed by any other journal in this section. And its proprietor will in the futnre, as he has in the past, utilize all the resources at his command to constantly improve the journal whose success and prosperity is his highest ambition.

The *Champion* is owned and controlled solely by its editor. Its position is absolutely independent. It has no interest to serve except the interests of the people, and it will be at all times a conscientious and honest advocate of all measures calculated to promote the prosperity of all classes, and an unyielding opponent of whatever conflicts with the well-being of the public.

The *Champion* is the only paper in Atchison or Northern Kansas that belongs to the Associated Press, or that receives full and reliable telegraphic reports. It publishes, each morning, an account of every event of importance transpiring during the previous day in any part of the civilized world. It also furnishes full and reliable market reports received by telegraph, giving the previous day's quotations in New York, St. Louis, Chicago and other eastern cities.

Attention is especially directed to its remarkably interesting and valuable letters from the State Capital during the sessions of the Legislature. These have never been equalled in fullness of detail, vigor and independence of criticism, and general interest, by the correspondence of any other journal in the State.

The *Champion* is Republican in politics. It has always been, and it expects to continue its advocacy of the principles of that party in the future. It has faith in the progressive policy of the Republican organization, and that it will continue to deserve the support and confidence of the best and most intelligent people of the country by the position it assumes upon all questions affecting the welfare and happiness of the people or the liberty and honor of the Republic.

After nineteen years of assiduous effort on the part of its proprietor, the *Champion* is established on an absolutely sound and permanent basis, which no possible contingency can effect. That the people, not only of this city but throughout the State, appreciate his endeavor to build up a first-class journal, is evidenced in the extent of the patronage given the *Champion*.

We are always glad to hear from the people, and to discuss topics which interest them. Our columns are always open and ready to welcome their communications, for we aim to make the *Champion* emphatically the people's newspaper. Correspondence on any and all topics of general interest is solicited, from any and all parts of the State. Letters detailing facts in relation to the growth and development of the country or towns, or communicating intelligence respecting the crops, industries, manufactories, commerce, or current events in any part of the State, are especially invited.

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As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

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News, Girard, Crawford coumty. A Democratic weekly paper published at the county seat of Crawford county, $1.50 per year. Tipton & Lamoreaux, Editors.

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Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

Independent. Minneapolis, Kansas. Established 1871. The oldest, largest and cheapest paper in the beautiful Solomon Valley. Price $1.50 a year. Politics, independent but not neutral. W. Goddard, Publisher. 43-3m

---

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

---

Home Record, Leavenworth, Kansas. Established in 1872. Is the organ of the Home of the Friendless, an Institution founded and controlled by the women of the State of Kansas. Circulation, 3,200. No better medium for advertising in this section. Mrs. C. H. Cushing, Editor. 44-3m

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Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the Structure, Growth, and Value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, in the Wood and Iron Shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

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CALENDAR:—Winter Term began Thursday, January 4th, 1877, and closes May 23d, 1877.

For further information, apply to
J. A. ANDERSON, President.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, MARCH 17, 1877. No. 48.

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TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
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Reform in Education.

The great republic of America should lead off among the nations in such measures as will most surely secure to all her youth of both sexes the advantages of the most thorough, practical education that can be furnished to children under sixteen years of age; and Kansas the central State of this great republic, the State which by declaring for freedom made the whole country free, should lead all her sister States in such legislation as is calculated to give her children the best possible education. To this end, normal schools, on a right basis, and the Agricultural College, should be fostered. Any thing in the way of a University we consider of secondary importance, or at least it can afford to wait for better times for any very extensive appropriations, while it is of immediate and overwhelming importance that the great masses of the children of the State have the advantages of the best possible system of common schools from the time they are old enough to go to school till they are old enough to decide upon and commence to learn the business they are to follow through life.

To us it is very plain that a judicious system of normal schools should be maintained in the State, as the first step our Legislature can take towards providing good common or public schools. And although it is probably to late now to bring any influence to bear on our Legislature to induce it to retrace its steps on this subject at its present session, we desire to say to those of them who may read the *Gazette*, that if they ever go back to Topeka to make laws for us we certainly hope they will have their minds made up at the beginning of the session that one of the first duties they owe to their constituents is to provide so far as possible for the most thorough, practical and effective education of their children. And we hope they will also go there prepared to vote for and urge the enactment of such laws as will provide for a proper but inexpensive system of normal schools, or to be able to give good reasons why they do not pursue such a course.

To our mind, a grand reform, a thorough change in the entire curriculum of our common schools is necessary. In the first place our orthography should be overhauled and repaired, and we should spell just as we pronounce and pronounce just as we spell. Then one-half of the entire time of school children, which is now spent in vainly trying to learn to read and spell, could be devoted to some practical or scientific study. But aside from this, the utter folly of keeping classes in the public schools year after year learning to repeat the rules of grammar, when not one in ten of them know any more about it when they get through than they did when they began, should be done away with.

Another reform which ought to be forced upon the schools and upon tradesmen is the adoption of the metric system of weights and measures, which, whenever adopted, would save four-fifths of the time now spent by our children in learning "'rithmetic."

These terrible stumbling blocks to the education of the children of the State should be cleared out of the way by wise legislation, and at the earliest possible moment, and something of mineralogy, geology, botany, drawing, philosophy, chemistry, history, vocal music, mechanics, astronomy, political economy and other practical studies should take their place.

The Agricultural College should be built up and made the university of the masses. It should be a school where the same kind of a practical education we have outlined for the common schools, but a more thorough and extensive one, can be obtained at so low a price and with such facilities for students to "work their way," that every energetic boy and girl in the State, with good health and pluck, can have the advantage of a year or two of study there.

In speaking of the University proper as of secondary importance, we do not wish to be understood as being opposed to giving it any State aid. But we do think that while the people feel poor and unable to bear heavy taxation for educational purposes, they have a right to demand that the practical, every-day schools for the many, and the furnishing of the best of teachers to these common schools, should have the first attention of the Legislature and the most generous appropriations of the public money.

The Legislature which fails to give its best thought and most profound attention to the question of how to make the best provision for the proper education of the children of the State, fails to perform one of its most important functions.

There is room for a great reform in our school laws and our school system from beginning to end.—[*Wyandotte Gazette.*

Wide-Tired Wheels.

This is another point which we are pretty apt to overlook, greatly to our disadvantage. We suffer ourselves to be guided by wagon-makers, and the wheel-wright knows very well that he lives by his trade. He serves himself when we are suited with narrow wheels. A set of wheels with four-inch or six-inch rims and heavy tires cost to make considerably more than a set of two and a half inches wide, but an extra price is always put on them. They are well worth it. A wagon or cart with a six-inch tread will take heavy loads over soft meadows and hardly leave a track, while a narrow-wheeled wagon with a similar load could not go at all. On country roads, such broad tread vehicles destroy ruts and act like rollers, making the roads agreeable for light carriages and keeping them in much better order throughout the year. It would be a real blessing to every State of the Union to put so heavy a tax on narrow wheels upon heavy wagons and carts that they would become quite obsolete. Millions of dollars would be saved to the people of each State, in repairs of roads, in repairs of wagons, and in horse flesh.—[*American Agriculturist.*

Alfalfa for Hay.

Formerly there was a very strong prejudice against alfalfa for hay, especially for horses. It was considered good enough for cattle, but too coarse for horses. The principal reason for this prejudice was found in the fact that we did not know in the first place how to sow alfalfa, and in the next place when to cut it and how to use it. Years of experience have taught our farmers what there is in both these points, and now alfalfa is the best hay produced in California, if not the best produced in any other country. Alfalfa seed wants to be sown thick, at least twenty-five pounds to the acre. If sown this thick, and a good stand is obtained, the clover grows fine, the stem being tender and juicy instead of coarse and woody. But even then it must be cut early, or before the seed begins to form.

The best time to cut alfalfa for hay is before the blossom is in full development. This is not all. If cut thus early and then not properly cured, the hay is greatly injured if not ruined. It must not be dried in the sun, but as soon as wilted should be raked into the winrow and put into small ricks or heaps, to be dried principally by the air and without direct exposure to the air. Those who are going to sow alfalfa this spring will bear in mind that one acre thick on the ground will be worth more than two acres standing sparsely on the ground. If you have but a small amount of seed, better sow that on a part of your land and wait till another year to sow the balance. When once it is seeded it is almost impossible to thicken the stand by sowing new seed with the old clover, from the fact that at any time the new seed would grow that already on the ground so shades it that it will not germinate. The sowing must be done well at first. Sow thick, and then cut and cure as suggested, and you will have the best of hay for cattle or horses, or any hay-eating animals.—[*San Francisco Bulletin.*

The tax for State purposes this year will be half a mill less than last.

All men are not homeless, but some men are home less than others.

A glass-blower has recently died at the age of 110 years. His great age is another proof of the truth of the blew-glass theory. —[*Philadelphia Bulletin.*

The bill for compulsory education has passed the Ohio Legislature. The law will take effect on the 1st of next September, and compels all children in the State between 8 and 14 years of age to attend school at least 12 weeks in each year, not less than six weeks of such attendance to be consecutive.

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Another reform which ought to be forced upon the schools and upon tradesmen is the adoption of the metric system of weights and measures, which, whenever adopted, would save four-fifths of the time now spent by our children in learning "'rithmetic."

These terrible stumbling blocks to the education of the children of the State should be cleared out of the way by wise legislation, and at the earliest possible moment, and something of mineralogy, geology, botany, drawing, philosophy, chemistry, history, vocal music, mechanics, astronomy, political economy and other practical studies should take their place.

The Agricultural College should be built up and made the university of the masses. It should be a school where the same kind of a practical education we have outlined for the common schools, but a more thorough and extensive one, can be obtained at so low a price and with such facilities for students to "work their way," that every energetic boy and girl in the State, with good health and pluck, can have the advantage of a year or two of study there.

In speaking of the University proper as of secondary importance, we do not wish to be understood as being opposed to giving it any State aid. But we do think that while the people feel poor and unable to bear heavy taxation for educational purposes, they have a right to demand that the practical, every-day schools for the many, and the furnishing of the best of teachers to these common schools, should have the first attention of the Legislature and the most generous appropriations of the public money.

The Legislature which fails to give its best thought and most profound attention to the question of how to make the best provision for the proper education of the children of the State, fails to perform one of its most important functions.

There is room for a great reform in our school laws and our school system from beginning to end.—[*Wyandotte Gazette.*

Wide-Tired Wheels.

This is another point which we are pretty apt to overlook, greatly to our disadvantage. We suffer ourselves to be guided by wagon-makers, and the wheel-wright knows very well that he lives by his trade. He serves himself when we are suited with narrow wheels. A set of wheels with four-inch or six-inch rims and heavy tires cost to make considerably more than a set of two and a half inches wide, but an extra price is always put on them. They are well worth it. A wagon or cart with a six-inch tread will take heavy loads over soft meadows and hardly leave a track, while a narrow-wheeled wagon with a similar load could not go at all. On country roads, such broad tread vehicles destroy ruts and act like rollers, making the roads agreeable for light carriages and keeping them in much better order throughout the year. It would be a real blessing to every State of the Union to put so heavy a tax on narrow wheels upon heavy wagons and carts that they would become quite obsolete. Millions of dollars would be saved to the people of each State, in repairs of roads, in repairs of wagons, and in horse flesh.—[*American Agriculturist.*

Alfalfa for Hay.

Formerly there was a very strong prejudice against alfalfa for hay, especially for horses. It was considered good enough for cattle, but too coarse for horses. The principal reason for this prejudice was found in the fact that we did not know in the first place how to sow alfalfa, and in the next place when to cut it and how to use it. Years of experience have taught our farmers what there is in both these points, and now alfalfa is the best hay produced in California, if not the best produced in any other country. Alfalfa seed wants to be sown thick, at least twenty-five pounds to the acre. If sown this thick, and a good stand is obtained, the clover grows fine, the stem being tender and juicy instead of coarse and woody. But even then it must be cut early, or before the seed begins to form.

The best time to cut alfalfa for hay is before the blossom is in full development. This is not all. If cut thus early and then not properly cured, the hay is greatly injured if not ruined. It must not be dried in the sun, but as soon as wilted should be raked into the winrow and put into small ricks or heaps, to be dried principally by the air and without direct exposure to the air. Those who are going to sow alfalfa this spring will bear in mind that one acre thick on the ground will be worth more than two acres standing sparsely on the ground. If you have but a small amount of seed, better sow that on a part of your land and wait till another year to sow the balance. When once it is seeded it is almost impossible to thicken the stand by sowing new seed with the old clover, from the fact that at any time the new seed would grow that already on the ground so shades it that it will not germinate. The sowing must be done well at first. Sow thick, and then cut and cure as suggested, and you will have the best of hay for cattle or horses, or any hay-eating animals.—[*San Francisco Bulletin.*

The tax for State purposes this year will be half a mill less than last.

All men are not homeless, but some men are home less than others.

A glass-blower has recently died at the age of 110 years. His great age is another proof of the truth of the blew-glass theory. —[*Philadelphia Bulletin.*

The bill for compulsory education has passed the Ohio Legislature. The law will take effect on the 1st of next September, and compels all children in the State between 8 and 14 years of age to attend school at least 12 weeks in each year, not less than six weeks of such attendance to be consecutive.

THE INDUSTRIALIST.

SATURDAY, MARCH 17, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

The Testing of Fruit.

The question is very far from settled what varieties of fruit will prove best for Kansas soil and climate. Apples have probably received much more attention than any other fruit, but even in regard to them our experience is quite too limited for us to determine what is best always and everywhere to plant. The reason of this is obvious; for to test the adaptability of different varieties of fruit to a new region, subject to peculiar climatic conditions, is a slow and expensive work. This must be true of all fruits which come into bearing only after several years of growth, as, for example, the apple and pear. Another reason for slow progress is the fact that the experimenter as a rule can never anticipate a money return for his outlay. While his work may be of immense importance to the State, he will be compelled generally to find his only reward in the consciousness of doing a good work.

Another reason for slow progress is the utter stolidity with which a large class of tree-planters tread on in the path of their fathers. They will tell you that the fruit which they have is good enough for them, and they can see no reason why so much time must be spent in seeking for other or better. So thought the old Roman two thousand years ago, even while he boiled his pears in wine to make them palatable. Even the fruit world has moved a little since then, and, notwithstanding such sage conclusions, may possibly move a little more.

The work of testing fruit trees and vegetables for a State is usually under-estimated both with respect to its magnitude and intrinsic importance. The cost of such labor can scarcely be estimated. There is certainly no reason why the man who gives all his energies for years to testing the adaptability of different varieties of a single fruit to a given section of country, thereby aiding in the selection of the best possible list for the State, should not receive the grateful commendations of the people. We think that the thanks of all lovers of good fruit are due to Dr. W. M. Howsley for the time and care by which he has sought to determine what varieties of apples are best suited for planting in his portion of the State. While it should be a settled maxim with every orchardist not to plant a large number of varieties, it is of the utmost importance that we should know just what it is best to plant. Somebody, then, must plant a large number of varieties, or we shall make little progress in our search for knowledge of desirable kinds. Dr. Howsley has done his part of this work by testing over three hundred varieties, embracing the following list as well as others:

SUMMER.

1. Pound Royal.
2. Bohannon.
3. White Sugar.
4. Williams Red.
5. Haskell Sweet.
6. Kirkbridge White.
7. Carolina Red June.
8. Trenton Early.
9. Early Pennock.
10. Summer Pippin.
11. Lewis.
12. Black Annette.
13. Fenly.
14. Red Stripe.
15. Summer Bellflower.
16. Yellow June.
17. Sweet Paradise.
18. Summer Queen.
19. Summer King.
20. Hick's White.
21. Dyer, or Pome Royal.
22. Family.
23. Carolina Watson.
24. Bedford.
25. White Astrachan.
26. Julian.
27. Bachelor's Blush.
28. Kansas Queen.
29. White Cotton.
30. Summer Cheese.
31. Large Summer Queen.
32. Hocking.
33. Golden Sweet.
34. Primate.
35. Cooper's Early White.
36. Sweet June.
37. Fanny.
38. Starr.
39. Yellow Horse.
40. Sops of Wine.
41. Summer Rose of Ky.
42. Seek-no-further.
43. All Summer.

FALL.

1. Farmer's Fall.
2. Celestia.
3. Mote's Sweet.
4. Cracking.
5. Ohio Nonpareil.
6. Red Ashmore.
7. Nonpareil, Am.
8. Bonum.
9. Ragan's Red.
10. Cluster Pearmain.
11. Superb Sweet.
12. Victuals and Drink.
13. Gravenstein.
14. Jersey Sweet.
15. Lowell.
16. Keswick Codlin.
17. Fall Butter of Jones.
18. Western Beauty.
19. Dr. Watson.
20. Stillwater Sweet.
21. Smoke House.
22. Muster.
23. Honey Greening.
24. Fall Harvey.
25. St. Lawrence.
26. Buff.
27. Yop's Favorite.
28. Mamma.
29. Carter's Blue.
30. Chatahoochee Greening.
31. Black Warrior.
32. Wine.
33. Hunge.
34. Matamuskette.
35. Orange Sweet.
36. Buckingham.
37. Maiden's Blush.
38. Bachelor.
39. Brown's Late Queen.
40. Powers.
41. Fulton.
42. Alexander.
43. Champlain.
44. Baltzby's Sweet.
45. Orange of N. J.
46. Bush.
47. Waring's September.
48. Jefferson Co., N. Y.
49. Cloth of Gold.
50. Chenango Strawberry.
51. Cornell's Fancy.

WINTER.

1. Henwood.
2. Penn. Winesap.
3. Grimes' Golden.
4. Richmond.
5. White Rambo.
6. Sweet Pear.
7. Bledsoe Pippin.
8. Ky. Long Stem.
9. Brook's Pippin.
10. Green Crank.
11. Harris.
12. White Lady Finger.
13. Clayton.
14. Sweet Genet.
15. Late Pound Royal.
16. Shiawassee Beauty.
17. Wright's Genet.
18. Missouri Pippin.
19. Evening Party.
20. Belmont.
21. Pickard's Reserve.
22. Cayuga Red Streak.
23. Smith's Cider.
24. London Sweet.
25. White Pippin.
26. Canada Red.
27. Sweet Bellflower.
28. Munson Sweet.
29. McLellan.
30. Ladies' Sweeting.
31. Wash. Strawberry.
32. Nod Head.
33. Tender Skin.
34. Rock Pippin.
35. Bentley's Sweet.
36. Fort Miami.
37. Connett's Sweet.
38. Crain's Spice.
39. Starke.
40. Water Fall.
41. Snepps'.
42. Jarmenite.
43. Broadwell.
44. Spice Russett.
45. Peck's Pleasant.
46. Norton's Mellon.
47. Willow Twigg.
48. Terrell's Late.
49. Hoover.
50. Hughes' Crabb.
51. Lorick's Cluster.
52. Press Ewing.
53. Nickajack.
54. Maverick's Sweet.
55. Red Cedar.
56. Liberty.
57. Fameuse.
58. Crawford's Keeper.
59. Cullasaga.
60. Tompkin's King.
61. Taunton.
62. Clyde Beauty.
63. Cogswell.
64. Perry Russett.
65. Ramsdale's Sweet.
66. Mother.
67. Pryor's Red.
68. Albamarle Pippin.
69. Pilot.
70. Sully.
71. Mason Stranger.
72. Huntsman's Favorite.
73. Moor's Extra.
74. Kansas Keeper.
75. Oconee Greening.
76. Ewalt.
77. Newark Pippin.
78. R. I. Greening.
79. Striped Gilliflower.
80. Westfield Seek-no-further.
81. Roxbury Russett.
82. Shockley.
83. Maxey.
84. Boyd.
85. Dr. Curdd.
86. Ferris.
87. Hutcheson.
88. Red Winter Sweet.
89. Sparks.
90. Egyptian Queen.
91. Egyptian Russett.
92. Rubecon.
93. Broadinax.
94. Blondin.
95. Red Russett.
96. Baltimore Red.
97. Clark's Pearmain.
98. Tanner's Winter.
99. Franklin.
100. Guilford Battlefield.
101. Carolina Baldwin.
102. Broad River.
103. Mountain Sweet.
104. Faust.
105. Green Cheese.
106. Red Lady Finger.
107. McAffee.
108. Ortley.
109. Mala Carle.
110. Jersey Black.
111. Turn-off Lane.
112. Kinnard's Choice.
113. Hatcher's Seedling.
114. Baptist.
115. Ross Nonpareil.
116. Am. Golden Russett.
117. American Beauty.
118. Am. Golden Pippin.
119. Shelton's Red.
120. Ky. Cream.
121. Pittsburg Pippin.
122. English Russett.
123. York Imperial.
124. York Stripe.
125. Keim.
126. Blue Mountain.
127. French Reinette.
128. Lipkin's Sweet.
129. Creek.

A large number of these varieties have already fruited. Through the kindness of Dr. Howsley we are prepared to send a few scions by mail to any one desiring to test upon his ground some of the foregoing varieties, provided always that stamps are enclosed for return postage.—[*Prof. Gale.*

An Act

Providing for the turning into the treasury of public money, and prescribing the duties of the Treasurer and Auditor of State in keeping account of the same, and to repeal section two of an act entitled "An act amendatory of and supplemental to chapter 3 of the general statutes, relating to the Agricultural College," approved March 2, 1871.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. All public moneys received from any source except from State Treasurer on appropriations made by the Legislature, by the Warden of the State Penitentiary, Regents of the State University, Agricultural College Directors, Normal School Trustees, or other officers of any State Institution or Department authorized by law to receive and disburse moneys on account of the State, shall be turned over to the State Treasurer on or before the fifteenth day of each month succeeding the one in which the said moneys were received, except at the close of the fiscal year, at which time such returns shall be made on or before the close of said fiscal year, taking duplicate receipts of the State Treasurer for the same, one of which shall be delivered to the Auditor of State, together with the sworn statement of the officer so depositing, setting forth the source from which such moneys were received and that no other than the moneys so deposited with the Treasurer have been received by him during the period covered by said statement, and the other filed in the office of the institution or department.

SEC. 2. The Treasurer of State and Auditor of State shall keep an account of all moneys received as specified in section one of this act, and place it to the credit of such institution or department from which it was received, and the moneys so received by the State Treasurer shall become a part of the general revenue of the State, *Provided*, that nothing in this act shall be construed to prevent the use of the endowment or other contingent funds of any educational institution by the respective boards of regents, until the same shall be appropriated by law.

SEC. 3. That section 2 of an act entitled "An act amendatory of and supplementary to chapter 3 of the general statutes relating to the Agricultural College," approved March 2, 1871, be and the same is hereby repealed.

SEC. 4. All acts and parts of acts in conflict with this are hereby repealed.

SEC. 5. This act shall take effect and be in force from and after its publication once in the daily *Commonwealth*.

Approved March 6, 1877.

I, Thomas H. Cavanaugh, Secretary of State of the State of Kansas, do hereby certify that the foregoing is a true and correct copy of the original enrolled bill on file in my office.

In testimony whereof, I have hereunto subscribed my name and affixed the great seal of State. Done at Topeka, Kansas, the 6th day of March, A. D. 1877.

[L. S.] T. H. CAVANAUGH, Secretary of State.

From reports, a great deal of spring wheat will be sown in the State.

The Agricultural statistician at Washington, in his last report, says the increase in the production of corn for the past few years has been more rapid in Kansas than in any other State in the Union; the crop of 1876 equaling in amount that of Missouri, a far more populous State; and the prospect is that this year's crop will be larger than last year's.—[*Nationalist.*

THE INDUSTRIALIST.

SATURDAY, MARCH 17, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

Number of students enrolled this term, **173.**

The Board of Regents will meet next Tuesday at 7:30 P. M.

Music, fun, sense and nonsense at the College chapel, next Thursday evening.

A number of the students have been at work this week setting out trees along the walks and around the buildings, grading the roads, and otherwise improving and beautifying the appearance of things.

Remember the entertainment which Prof. Platt's singing class will give in the College chapel, next Thursday evening, 22d inst. Admission, 25 cents. Every effort is being made to insure a pleasant time to those who attend.

Judge Brewer's lectures on Practical Law will be given next week as follows: Tuesday, at the fourth hour; Wednesday, at the third hour; Thursday, at the second hour; and Friday, at the first hour. The last lecture will complete the course.

Being absent from town, we had not the pleasure of hearing Prentis' lecture, but hear it spoken of on all sides and by most competent judges as an exceedingly interesting and entertaining historical sketch. Prentis shows sense in selecting subjects of American life, and his unquestioned genius in the racy manner in which they are handled.

The Household Economy class will please accept the thanks of "ye local" for that delicious pie sent us from the Kitchen Laboratory a few days ago. If this is only a foretaste of what that culinary department proposes to do in the way of cooking, we most earnestly desire to see it prosper. We heartily endorse the testimony printed in another column as to the excellency of the work which this class of young ladies is doing.

The following persons have visited the College this week: From abroad—Miss Carrie Gifford, Milford, Davis county; Col. Lines with friend, Wabaunsee, Wabaunsee county; I. T. Goodnow, Neosho Falls, Woodson; Jasper M. Howard, Waveland, Shawnee; Mr. Fletcher, Chicago, Ill.; Miss Hattie Thorpe, Salina, Saline; Wm. Sikes, Vienna, Pottawatomie. From Manhattan—Miss Aggie Woodman, 'Squire Tyrrell, Mayor Sawyer, Misses Hoyt, Barner and Haines, A. J. Pillsbury, S. M. Fox, Mr. Irish, J. W. Taylor, Miss Matie Pillsbury.

We had expected to print a full abstract of Judge Brewer's lectures, but have been disappointed in obtaining it. The present course is a continuation of that of last year, but is entirely different from it. The leading subjects treated so far have been those of Insurance and Bailment. Under the first head the Judge has fully explained the kinds of Insurance, the rights and duties of insurance companies and policy-holders, and in fact everything pertaining to the insurer and the insured. The subject of Bailment is an important one, and the Judge has clearly and fully laid down to the students the law regulating all the numerous and complicated questions coming under this head.

A year ago a plan was adopted for the planting of trees and shrubbery. During the last week the teams have been at work on the roads, and as many of the students as desired work have been transplanting trees. The plan includes a very free use of climbers around each building, and last season Prof. Gale prepared a large stock of ampelopsis, wisteria, etc. The question now is whether, in case these are moved to their new quarters, the hoppers will kill them. We propose to take the chances. The trees planted last season are looking well, and especially some large ones moved late in the fall. In a very few years, the new College grounds will be among the handsomest in the State. They have been occupied as such but a couple of years.

The class in Household Economy is progressing finely, and the anticipated difficulties in teaching cooking grow less every day. Besides being one of the most sensible things that a girl can learn, the department teaching this art promises to become one of the most popular in the Institution. A sick lady of our acquaintance pronounces judgment as follows:

The other day about noon our door opened softly and we saw—well! just a very smiling lady, then a plate which contained some of the most tempting-looking "pies-on" things imaginable. In a flash the thought came over us, it's "baking-day" in the Kitchen Laboratory, and we exclaimed, "Did you make these, or did the girls?" But let me describe the contents of this plate more minutely. There was a very light, flaky "Parker House" roll which first tempted us, and after just one taste we felt like Oliver "asking for more." Then there were two very good little "tarts," or "shells," or any one of the dozen different names house-keepers choose to give those little bits of pastry into which they put preserves, fruit, etc. Lastly, there was a good, substantial piece of apple pie, with nicely baked pastry—none of your tough, leathery, hotel pies,—and as we tasted and handed it over to a rosy-cheeked, always hungry boy who stood beside us, we thought: "If the first efforts of these young ladies produce such results, what can they not do when they have experimented and compounded for six or twelve months!" We must confess our faith in the success of the Kitchen Laboratory of the Agricultural College was strengthened immensely. We feel like saying: Go ahead, girls! and in all your wisdom-getting be sure you get a considerable amount of household lore, not the theoretical but the practical sort. One of these days you will find it matters not how literary or "highly intellectual" your Charles Augustus may be, he will not be insensible to a well-cooked dinner; and a common-place, unromantic attack of dyspepsia requires a prodigious amount of culinary skill on the part of the household divinity. Take advice on these points, and in being forewarned be forearmed. Somebody has truthfully said: "Great domestic happiness does not have its being in magnificent parlors, nor perfumed boudoirs, nor in the fascinations of a book-lined room called a library,—but comes more frequently from the kitchen. If all is not right there,—if disorder, waste and uncleanliness bear rule there,—she opens the windows, shakes the dust from her feet, spreads her light wings and departs."

Students' Column.

The moot-legislature was continued at the Websters last Saturday evening. The resolution to request the senators and representatives of this State to vote for the amendment to the U. S. Constitution allowing none but those who can read or write to vote was debated thoroughly but not voted upon. "An act to tax all dogs" was debated upon with much amusement, and passed almost unanimously. Several other acts were read which will be considered at the next session.

REPORTER.

The Alpha Beta Society elected its last set of officers for the present College year last Friday afternoon, 9th inst., with the following result: President, J. S. Griffing; Vice-President, Miss Ida Willey; Recording Secretary, Miss Ella Child; Treasurer, A. A. Stewart; Marshal, Miss Cora Neale.

Notice was given that an amendment to the constitution would be offered providing for the office of librarian. The amendment will undoubtedly be made and the libarian elected at the next meeting.

The question as to whether Mary, Queen of Scots, was guilty of treason, came up under the regular order of debate, and was ably argued and decided in favor of the negative.

Beamer and Ulrich with one or two more of the heavy men of the Society, oratorically speaking, will present themselves next Friday afternoon for the purpose of debating and settling forever the momentous question regarding the effects of the Chinese immigration. Members and visitors will please not forget to put cotton in their ears before coming. Every precaution will be taken to prevent the shattering of window glass and falling of plaster.

The following College items are taken from the *Nationalist:*

Quite a number of students have recently joined the temperance organization in the city.

Willard Elliot has left the College. We understand he contemplates starting East in a short time.

The class in Surveying, under the charge of Prof. Ward, is getting the data necessary for perfecting a map of the College farm.

One of the members of the Chemistry class, having spilled some nitrate of silver on his hands, his "dulciana" told him to either wear gloves, wash his hands, or stay at home.

Prof. Kedzie was around Tuesday morning with the bills for use of chemicals for the past month. We heard one student remark that Kedzie's autograph wasn't worth a dollar to him.

Prof. Shelton took the class in Practical Agriculture down to the barn the other day, and since then the boys talk of Short-horns, Galloways, Jerseys, etc., in a manner truly surprising to the uninitiated.

A number of the advanced members of Prof. Walters' drawing class are studying perspective. The Professor is doing some good work and deserves a great deal of credit for his exertions in endeavoring to give his pupils the benefit of his extensive knowledge of the art.

Judge Brewer re-commenced his lectures Tuesday, at the fourth hour. Last week he took up and finished the subject of Insurance. He is now lecturing on Bailment. In speaking on the latter subject, he explained the rights and privileges of landlord and guests in a remarkably clear and forcible manner.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-3m

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Expositor. Concordia. Only home paper in county. Large circulation. Large patronage. Independent. $1.00 a year. J. S. Paradis, Editor and Proprietor. 33

News, Girard, Crawford coumty. A Democratic weekly paper published at the county seat of Crawford county, $1.50 per year. Tipton & Lamoreaux, Editors.

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

New Century. The temperance paper of Kansas. Published at Fort Scott. Weekly, at one dollar a year. Rev. Jno. Paulson and Jno. B. Campbell, G. W. C. T., Editors. Sargent & Co., Publishers. 47-3m

Independent. Minneapolis, Kansas. Established 1871. The oldest, largest and cheapest paper in the beautiful Solomon Valley. Price $1.50 a year. Politics, independent but not neutral. W. Goddard, Publisher. 43-3m

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

Home Record, Leavenworth, Kansas. Established in 1872. Is the organ of the Home of the Friendless, an Institution founded and controlled by the women of the State of Kansas. Circulation, 3,200. No better medium for advertising in this section. Mrs. C. H. Cushing, Editor. 44-3m

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The Annals of Kansas, by Daniel W. Wilder. Published by Geo. W. Martin, Kansas Publishing House, Topeka. Price $5.

H. S. Roberts, M. D.—Office south side of Poyntz Avenue, between Third and Fourth streets. Residence corner of Third and Pierre streets. 16

Mathematics.—Practical, direct and thorough drill in Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics and Engineering. Work in Field, with Tape Line, Chain, Compasses, Transit and Level. The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

Special for Woman.—Special lectures on Farm Economy, by Prof. Shelton, discussing the Dairy, Poultry, etc. Gardening, by Prof. Gale, treating of the vegetable, flower, commercial and ornamental. Household Chemistry, by Prof. Kedzie, consisting of the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc. Special Hygiene, by Mrs. Cripps.

The Atchison Champion.—Daily and weekly. Weekly established, February 3d, 1855. Daily established, March 22d, 1865. The oldest and the leading journal of Kansas. Jno. A. Martin, Editor and Proprietor.

During the past month the weekly *Champion* entered upon the twenty-third year of its publication, and on the 28th of the month will enter upon the twentieth year of its publication under the proprietorship of its present editor and publisher. The daily *Champion* will, on the 22d of March, enter upon the thirteenth year of its publication.

The *Champion* was established in February, 1855. It was then called the *Squatter Sovereign*, and was an intense pro-slavery paper. It was purchased in 1857, by a company of Free State men, who continued its old name until February 1858, when the present proprieter purchased the establishment, changed the name of the journal to that of the *Champion*, and has ever since been its proprietor. From that time until the present, this journal has devoted all of its influence, energy and ability to making known the advantages, resources and wants of Kansas. Its circulation exceeds that of any other journal in the State. It publishes more reading matter every day and week, fuller telegraphic dispatches, more complete market reports, and a greater and better variety of news than any paper published in Northern Kansas. It has an established business, hosts of old and true friends and patrons, and advantages in obtaining early and correct intelligence superior to those possessed by any other journal in this section. And its proprietor will in the futnre, as he has in the past, utilize all the resources at his command to constantly improve the journal whose success and prosperity is his highest ambition.

The *Champion* is owned and controlled solely by its editor. Its position is absolutely independent. It has no interest to serve except the interests of the people, and it will be at all times a conscientious and honest advocate of all measures calculated to promote the prosperity of all classes, and an unyielding opponent of whatever conflicts with the well-being of the public.

The *Champion* is the only paper in Atchison or Northern Kansas that belongs to the Associated Press, or that receives full and reliable telegraphic reports. It publishes, each morning, an account of every event of importance transpiring during the previous day in any part of the civilized world. It also furnishes full and reliable market reports received by telegraph, giving the previous day's quotations in New York, St. Louis, Chicago and other eastern cities.

Attention is especially directed to its remarkably interesting and valuable letters from the State Capital during the sessions of the Legislature. These have never been equalled in fullness of detail, vigor and independence of criticism, and general interest, by the correspondence of any other journal in the State.

The *Champion* is Republican in politics. It has always been, and it expects to continue its advocacy of the principles of that party in the future. It has faith in the progressive policy of the Republican organization, and that it will continue to deserve the support and confidence of the best and most intelligent people of the country by the position it assumes upon all questions affecting the welfare and happiness of the people or the liberty and honor of the Republic.

After nineteen years of assiduous effort on the part of its proprietor, the *Champion* is established on an absolutely sound and permanent basis, which no possible contingency can effect. That the people, not only of this city but throughout the State, appreciate his endeavor to build up a first-class journal, is evidenced in the extent of the patronage given the *Champion*.

We are always glad to hear from the people, and to discuss topics which interest them. Our columns are always open and ready to welcome their communications, for we aim to make the *Champion* emphatically the people's newspaper. Correspondence on any and all topics of general interest is solicited, from any and all parts of the State. Letters detailing facts in relation to the growth and development of the country or towns, or communicating intelligence respecting the crops, industries, manufactories, commerce, or current events in any part of the State, are especially invited.

Terms, postage prepaid.—Weekly, per annum, $2.00; in clubs of ten, (in advance,) $1.50. Daily, per annum, $10.00; six months, $5.00. Daily, delivered by carrier, (per week,) 25 cents.

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial Pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; in Book-Keeping and Practical Law. Words, numbers and lines are the tools used by all industrialists in conveying or preserving ideas; and our endeavor is to make the student a ready workman in the art of using these tools for practical purposes, rather than to make him a critic of fancy English or a professor of abstract Mathematics.

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CALENDAR:—Winter Term began Thursday, January 4th, 1877, and closes May 23d, 1877.

For further information, apply to
J. A. ANDERSON, President.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, MARCH 24, 1877. No. 49.

THE INDUSTRIALIST.
Published every Saturday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Sheep Breeding in the West.

From the report of the Illinois Wool Growers' Association, just published by the Secretary, V. P. Richmond, Moro, Ill., we extract the following from the address of Hon. Samuel Archer, Kansas City, Mo.:

Mr. Archer said sheep and sheep registry improvement is in its infancy. We are working equally as well or better than any other country. We should go on increasing in weight of fleece and animal.

Wool has increased in long wool families from three or four pounds to ten or twelve pounds, even sometimes reaching twenty pounds. The mutton has increased from 100 and 150 lbs. to 250 lbs., sometimes weighing over 300 lbs. The Merino sheep came to us a small sheep, seldom over 50 or 60 lbs. in gross weight, carrying a fleece of little better than 4 lbs. We have the same sheep now, ranging in weight as high as 150 lbs., often over, and carrying a fleece from 15 to 20 lbs., often a second fleece weighing 7 to 8 lbs. The development in the Merino has not been so much in the line of carcass as in fleece. I believe the Merino capable of great development as a mutton sheep. The mutton qualities are equal to any other breed. When fattened, they command as high prices in Boston, New York, Philadelphia, Pittsburg, Chicago, and other large cities, as any other breeds. As they stand now, mutton can be made as cheap with Merino as other breeds — that is, 10 lbs. of Merino mutton cost no more now to produce than 10 lbs. of other mutton breeds. I don't say one is better than the other, but equally good. Sheep have been bred for different objects, some from the beginning of improvement were bred for mutton, some were bred for wool, some for both wool and mutton. Each has attained a high degree of perfection, but none are perfect. We must go on, breed better and purer, year by year. Study the points of perfection and breed for that perfection. Reach high and be sure to get to the highest point.

Some of the points are wide, high hips, straight back, ribs coming out straight, barrel shaped, full and round, wide in the shoulders and between the fore legs. Some want a full wrinkled skin and breed for it; some want a smooth skin and breed for that. Start out in breeding with a principle and adhere to it, or you will fail. Sheep with deep wrinkles cannot be kept free from blow flies in warm weather. My experience with them is not good. They do not shear more wool and are harder to shear. Smooth sheep shear as good clips. Found that the manufacturers threw whole fleeces of wrinkled sheep in as second and third class wool, on account of the coarse hair invariably found in the wrinkled fleeces. Wool went down with the manufacturers on this account the past year. I want to breed smooth sheep and no wrinkles.

I want now to speak of the register of sheep singly and by flocks. We want and must have the registry from this time on. The present condition is that the registry will be printed under the direction of the names of the patrons of the work.—[*Western Agriculturist.*

Self-Educated Men.

The chartered privileges of education furnished by our colleges can be more highly valued by no one than myself. But still it should be understood that an educated man is a MAN ALIVE. Many a boy who does not know Latin from Dutch, and has never seen any university but his mother's and the district school, having attained to the distinction of a living soul, is, in the highest sense, educated. Could this, which is the only just view of the case, be once established in the public mind, it would do much to encourage attempts at self-education, and would greatly endear the system of common schools.

Many years ago, in an obscure country school in Massachusetts, an humble, conscientious, but industrious boy was to be seen, and it was evident to all that his soul was beginning to act and thirst for some intellectual good. He was alive to knowledge. Next we see him an apprentice on the shoemaker's bench, with a book spread open before him. Next we see him put forth, on foot, to settle in a remote town in this State, and pursue his fortunes there as a shoemaker, his tools being carefully sent on their way before him. In a short time he is busied in the post of County Surveyor for Litchfield county, being the most accomplished mathematician in that section of the State. Before he is twenty-five years old we find him supplying the astronomical matter of an almanac published in New York. Next he is admitted to the bar, a self-qualified lawyer. Now he is found on the bench of the Superior Court. Next he becomes a member of the Continental Congress. There he is made a member of the committee of six to prepare the Declaration of Independence. He continues a member of Congress for nearly twenty years, and is acknowledged to be one of the most useful men and wisest counsellors of the land. At length, having discharged every office with a perfect ability, and honored, in every sphere, the name of a Christian, he dies regretted and loved by his State and Nation. Now this Roger Sherman, I maintain, was an educated man. Do you ask for other examples? I name, then, Washington, who had only a common domestic education. I name Franklin; I name Rittenhouse; I name West; I name Fulton; I name Bowditch; all common school men, and some of them scarcely that, but yet all *educated men*, because they were "MADE ALIVE." Besides these, I know not any other seven names of our countrymen that can weigh against them. These are truly American names, and there are the best of reasons to believe that a generous system of public education would produce many such. Let them appear, and if they shall embody so much force, so much real freshness and sinew of character as to decide for themselves what shall be called an education, or shall even be able to laugh at the dwarfed significance of college learning, I know not that we shall have any reasons for repining.—[*Dr. Horace Bushnell.*

SHE said it was a very bright idea. He said he knew a brighter one, and when she asked him what it was he answered, "Your eye, dear!" There was silence for a moment, then she laid her head upon the rim of his ear and wept.—[*Boston Globe.*

Kansas.

For two years past Kansas wheat has graded higher than any other marketed in St. Louis. Kansas broom-corn is pronounced, by broom manufacturers everywhere the best in the market, and it commands, in Chicago, better prices than any other. Kansas fruit has taken the premium in every instance where it has been exhibited in competition with the fruit of other States. Three average seasonable years out of five will make Kansas one of the wealthiest States in the Union. And Kansas is receiving more immigrants to-day than any other two States of the Union.—[*Atchison Champion.*

HOW TO GET NEW TOOLS.—And now, dear farmers, such of you as are tired of the old tools, let us give you a bit of advice. If you don't take it any better than advice we have given you on former occasions, all right — it will be no great loss to us; so here it is: Do not rub linseed oil on your fork and shovel and rake handles; do not paint your plows and mowers; do not use any rust preventive on the iron and steel parts, and above all, leave everything out of doors. You really have no idea how quickly you will possess a new set of tools, provided you have a balance at the bank.—[*Journal of Progress.*

The Normal School.

This institution is "out in the cold," so far as a State appropriation is concerned. We cannot now tell what the result will be — that is, whether the school is to be continued or not. The present teachers have run the institution a year for about nothing and boarded themselves. The last action was the defeat, in the House, of an appropriation of $6,500 which had passed the Senate. This was on Tuesday, the Senate having voted the amount on Monday. It received 53 votes in the House, and it is believed that had not many of the members gone home, the bill would have passed the House. Mr. Kellogg's bill to appoint a new Board, and to allow the lands to be sold at $3 per acre, was passed. If the lands could be sold at $3 per acre, it would raise a fund of about $110,000, the interest of which could be used to run the school. We hope the new Board can sell them and go ahead with the institution.—[*Emporia News.*

THE INDUSTRIALIST.

SATURDAY, MARCH 24, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE Annual Oration before the Agricultural College, at its next Commencement, will be delivered by COL. J. R. HALLOWELL, of Cherokee county.

About Feeding and Caring for Live Stock.

There is probably no branch of farm work that pays so well for the exercise of skill and judgment, as in the feeding and general management of live stock. Certainly no labor is so hard to obtain as that of men competent to look after all the interests of a herd of cattle, sheep or swine. Not long since we heard a farmer assert that after over forty years of stock-raising and general farming on a large scale, he had never had any serious difficulty in obtaining an abundance of general farm laborers, but he never found but one man that he considered first rate at doing "chores." Among what are called the breeders of "fancy stock," this fact is well understood; they almost invariably employ one man called the herdsman, exclusively managing the herd, and for his services two and even three or four times the wages of the farm laborer is cheerfully paid. We have in mind two or three instances in which $1,500 and $2,000 have been paid for the single service of the herdsman. Now, these men would not pay such wages unless they received an equivalent, and this they unquestionably do receive in the skillful application of the knowledge possessed by the herdsman.

It may be said to all this that the case is a special one, and that the general farmer and stock-raiser has few interests in common with "distinguished breeders" and the breeders of pure-bred stock generally. We have heard this argument often and are confident that the idea is one of those mistakes which so often results in disastrous blunders. The breeder and the general farmer are alike interested in obtaining the best results for the food consumed by their stock, in preventing diseases, and generally maintaining their herds in the best condition. Take the single matter of diseases: we are satisfied, and that after careful observation, that fully ninety per cent of all the losses of farm stock from disease in Kansas is the result of mismanagement or gross neglect in one particular or another.

The great impediment to-day to the wider and more general diffusion of better and more profitable stock throughout the land, is the wide-spread ignorance or skepticism as to the value of such stock first, then as to its necessities, and the means necessary to obtain the best results therefrom. Even where the more enterprising farmer has ventured upon the great unknown sea of improvement, it generally proves his first and only venture. He receives from some breeder a Short-Horn calf or a Berkshire pig of approved pedigree and excellent form, and for a time the farmer is delighted and his neighbors regard him as the benefactor of the district; but, if the crops are abundant, the animal, surfeited the first season perhaps with corn or other heating foods, becomes excessively fat and proves to be a non-breeder; or, if the crops of the season are light, the animal is turned out on the range or into the "hog pasture" to shift for himself, and grows into an animal that only differs from the scrub in being a little larger or of a different color.

But the need of skill and judgment in the management of live stock is by no means confined to pure-bred animals. Scrubs, even the worst, will pay and pay well for constant oversight and watchfulness as to the quantity and quality of their food, water, shelter, and all the conditions necessary to such animals. There is an old adage that "it is better to pay the cook than the doctor," usually applied to the human subject, but which applies equally well to the care of domestic animals. If the calves of a particular herd are peculiarly subject to the "black leg," or if a particular animal is unthrifty or "off feed," it is safe to conclude that there is something wrong either in the general management or in special cases. That most terrible scourge of the western farmer, "hog cholera," which carried off in one year in the single State of Illinois hogs to the value of eight million dollars, it is generally agreed by those who have given the subject most attention, is the result directly or indirectly of too much corn, too little shelter, and too filthy quarters,—to mismanagement, in short.

Knowledge, skill and judgment are powers when enlisted in the farmer's cause, and he who has most of these will not be long without proportionate profits.—[*Prof. Shelton.*

Orchardist's Shield (?).

The following correspondence will speak for itself, and should be carefully considered by any orchardist who may be tempted to invest to the extent of five dollars in a recipe which, if its claims are half true, would revolutionize fruit-growing. With this wonderful compound in hand the painstaking entomologist may as well hang up his moth-net and lay by his glass. We are out here specially interested to know whether the inventor has yet applied his wonderful compound to the g-hopper and chinch-bug. If so, his fame and fortune are sure. It may be as effective as concussion:

PROF. WM. K. KEDZIE,
Manhattan, Kansas,

My Dear Sir:—Enclosed I send you a recipe which is being sold in this vicinity for five dollars. It is claimed for this compound when applied to the tree to be a sure and reliable protection against the attacks of all classes of borers, the Codling Moth, and Curculio, which works in the fruit, for the term of ten years. The mixture is to be applied around the collar of the trees. It may seem absurd in me to call your attention to this matter, but you will very much oblige me by giving your opinion upon the merits or demerits of this mixture. Our County Horticultural Society meets on Saturday of this week and I desire some expression from you as to the virtues of the recipe to present at that time, also to be published with its proceedings.

Yours, very truly,
G. C. BRACKETT, Sec'y.

Mix 1 quart of coal tar, ½ pound chlorate of lime, ¼ pound copperas, 5 drachms carbolic acid, 1 peck wheat middlings or shorts. Add water and boil together till assimilated, and apply to the trees with a brush.

G. C. BRACKETT, ESQ.,
Lawrence, Kansas,

Dear Sir:—Your favor of March 13th, enclosing recipe for "Orchardist's Shield," and requesting my opinion thereon, is at hand. It is quite needless for me to respond that I consider it only another of the varied humbugs which from time to time impose themselves on the attention of Kansas orchardists. Among the ingredients of the mixture, the copperas as an insect poison is utterly inert; after a few weeks' exposure the chloride of lime will be decomposed and the carbolic acid disappear; and how the coal tar, the only sensible ingredient present, is to prevent the depositing of eggs by the Codling Moth and the Curculio Beetle, I confess myself quite unable to imagine. Your Society is to be commended for thus exposing to fruit-growers the true nature of these compounds.

Yours, very truly,
WM. K. KEDZIE.

A Wet Summer.

It seems to be a pretty well established fact that the theory discussed at length several years ago, by C. W. Johnson, Esq., of this city, and which is, that heavy snows in the mountains during the winter and spring are always followed by abundant rains throughout the country between the Missouri river and and the mountains, is a correct theory. The experience and observation of plainsmen and army officers for a quarter of a century past sustains it, and it is based on correct scientific principles. We may, then, rest assured that we shall have abundant rains this summer. The snows in the mountains have been abundant all winter, and for the past ten days there has been almost a continuous snow-storm there. The drifts are immense. There have been several instances of loss of life by avalanches. The valleys are covered to an enormous depth. There has not been another such winter, with respect to snowfalls, for many years past.—[*Atchison Champion.*

IT is rather significant that a number of western Massachusetts people, who went to Kansas a few years since and came back disgusted, have come to the conclusion that, after all the pests of grasshoppers and drouth, times in Massachusetts are worse than in Kansas and are preparing to return, this time to stay. Most of them go to Neosho county where so many Worchester county people are located.—[*Boston Globe.*

THE INDUSTRIALIST.

SATURDAY, MARCH 24, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending March 22d, 1877.

DAY OF WEEK AND MONTH.		Temperature. Max.	Min.	Mean.	Bar. Mean Hight.	Inches of Rainfall.
Friday	16	38°	14°	30°.25	28.80	
Saturday	17	52	20	38	28.93	
Sunday	18	75	29	57. 75	28.64	
Monday	19	56	34	45	28.71	
Tuesday	20	53	23	35. 50	28.58	
Wednesday	21	71	31	54. 75	28.65	
Thursday	22	66	20	46.	28.44	

Average temperature for the week, 43°.89.
Range of temperature for the week, 61°.

Frank Landon is attending Spalding's Commercial College, Kansas City, Mo.

Mr. Jacob Winne has just completed the new cistern on the north side of the blacksmith shop.

The ground around the mechanical and horticultural buildings is being ploughed, and will be seeded to grass.

The Manhattan people are agitating the question of voting bonds for the erection of a new city school building.

Dr. W. W. King, of Fort Scott, will deliver a course of temperance lectures in Manhattan, beginning next Wednesday evening.

Prof. Gale has invented a novel method of preventing the young grasshoppers from injuring his trees. Take out a patent, Professor.

March 19.— The young Rocky Mountain Locusts have been seen to-day for the first time. *March 22.*—More locusts in warm locations, but not numerous yet.

On Friday, after enjoying spring weather for several days and preparing to enter our garden, we were unceremoniously introduced to a regular old-fashioned snow-storm. This thing of winter lingering in the lap of spring every year is too diaphanous.

All who attended the entertainment given by Prof. Platt and his singing class last Thursday evening, unite in the verdict that it was a rare musical treat. We can not refer specially to the different pieces, but they were good selections and were sung in a masterly manner. It is quite evident, after hearing these students sing, that the two hours a week which they devote to that exercise has not been spent in vain. They have been given a thorough drill, have acquired a talent they would not readily part with and which will be of great use to them in the future. The net proceeds were $28.00, which, considering the state of the weather and the fact that there was another entertainment in the city, is the most substantial evidence of success.

The Board of Regents met on the call of the chairman last Tuesday evening, and has been in almost constant session until its adjournment on Friday evening. Much important business was transacted, and the usual examination into the condition of the several departments was made. The plans for a new barn presented by Prof. Shelton were adopted, and the contracts will be let so soon as the drawings and specifications are made by the architect, Mr. Carr, of Leavenworth. Two Champion fire extinguishers were ordered, and the executive committee was directed to have a stone walk constructed from the laboratory building to the east entrance to the College grounds. The appropriation for finishing the College and mechanical buildings will be expended during the summer vacation. The meetings began early and ran late, and besides proving busy ones were exceedingly pleasant. The Board adjourned to meet Monday, May 21st, 8 A. M., Commencement week.

The following books were placed in the new library of the Alpha Beta Society last Tuesday afternoon. For a beginning, we deem this a very fair showing. We publish the list because it will particularly interest old members of this Society, and for the further reason that those who have assisted the Society, directly or indirectly, in starting this library will be glad to know what books have been purchased:

Scientific American Supplement; Darwin's Origin of Species; More Criticisms on Darwin; Evolution-Philosophy; Bain's Mind and Body; Conflict of Religion and Science; Frederick the Great and his Court; Getting on in the World; Johnson's Works, 2 vols.; John Halifax, Gentleman; The Last Days of Pompeii; Cairnes' Political Economy; Memories of Many Men and Some Women; Politics for Young Americans; The Wit and Beaux of Society; The Vicar of Wakefield; Around the World; Somerville's Physical Sciences; Fast Life on the Modern Highway; Faraday's Physical Forces; Draper's Civil Policy of America; Macaulay's Life and Letters, 2 vols.; Through and Through the Tropics; Romola,—Geo. Eliot; Baldwin's Pre-Historic Nations; Indiana—Geo. Sand; Put Yourself in His Place—Charles Reade; Kathrina—Holland; Yellowstone—Bayard Taylor's Library of Travel; Japan—Bayard Taylor's Library of Travel; Sublime in Nature—Illustrated Library of Wonders; Egypt 3,300 Years Ago—Illustrated Library of Wonders; Swift's Works; Dickens' Works, 4 vols.,—Pickwick Papers, Martin Chuzzlewit, David Copperfield, Nicholas Nickleby; Tennyson's Poems; The Scottish Chiefs; Inside—Chronicle of Secession; Fourth Agricultural Report and Census of Kansas, 1875; The Industrialist, Vol. I; Haven's Rhetoric; Elements of Agriculture; How to do Business; Elements of Logic; Bunyan's Sinner's Progress; Proverbial Philosophy; Porter's Elementary Principles of Chemistry; Nelson's Cause and Cure of Infidelity; Kiddle's Elementary Astronomy.

By invitation of the young ladies composing the class in Household Economy, heartily concurred in by Mrs. Cripps, the Board of Regents dined in the Kitchen Laboratory last Thursday. The occasion excited all the more interest in the minds of both entertainers and guests because of the fact that this was not only the first effort of the class in this direction, but also the first effort of the first class to whom the art of cooking has been taught in any college in the United States.

The table was nicely "set" and handsomely decorated with flowers, which latter were only exceeded in attractions by the young ladies themselves, according to one of the Regents. The first course was a delicately-flavored soup, as good as any we ever tasted. It was followed by roast beef cooked to a turn, with well-seasoned gravy; Irish potatoes boiled; ditto, fried; sweet potatoes boiled; jellied beef; and cold roast pork. The dessert consisted of Union pie, Washington pie, a very nice apple something-or-other that we don't know the name of, two or three kinds of cake, and coffee and apples. The dishes were prepared by the class under Mrs. Cripps' supervision, and in every respect were just as far ahead of anything that we expected at this progress of the class as ten is ahead of two. The bread, meats and vegetables were just what they ought to be, the dessert would charm both an epicure and a dyspeptic, and the coffee was superb. In one sense the dinner was an "examination," and the unanimous judgment of the Regents was that the teaching of Household Economy in this College was a decided success. Whether the dinner got away with their judgments or not, we are eminently certain that they multitudinously got away with the dinner; and the best evidence that could be asked touching the wholesomeness of the dishes walked around in the fact that they weren't individually sick—all except us! Governor Salter, as chairman, made a neat speech expressing the Board's gratification with the "examination" and appreciation of the importance of the department.

AUCTION SALE OF NURSERY STOCK AT THE AGRICULTURAL COLLEGE.

April 4th, 1877, Commencing at 10 O'Clock, A. M.

In order to effect important changes in the College grounds, it has been found necessary to dispose of the entire nursery stock immediately. Hence, we offer at auction, in assorted lots, apple, pear, cherry, peach and plum trees; currants, gooseberries, blackberries; a fine lot of rhubarb roots; a quantity of flowering shrubs, evergreens, and other ornamental shrubs.

Terms:—Cash for all sums under ten dollars. For sums over ten dollars, a credit of twelve months, with interest at ten per cent per annum, will be given on approved security.

E. GALE, Sup't Hort. Dep't.

Manhattan, Kas., March 23d, 1877.

Students' Column.

"Q. Z." of the *Nationalist* refers to my "dulciana" reproving me for spilling nitrate of silver on my hands. He will please take cognizance of the fact that I havn't any "sweet-toned organ-stop." But should he have occasion in the future to speak of my sweetheart, if he wants to be sentimental and must give her some famous pseudonym, I hope he will use a synonymous, at least an appropriate, term. Sometimes, just to be a little romantic, I call her my "Dulcinea," that being a part of the name given by Don Quixote to the lady of his thoughts. MEMBER OF CHEMISTRY CLASS.

It is not sound, national policy for the United States to encourage Chinese immigration. At least, so it was decided by the Alpha Betas at their meeting on the 16th. The question for debate was of the import above indicated.

Under extemporaneous speaking considerable excitement was manifested; also some display of parliamentary lore by parties who evidently had an ax to grind. A. A. Stewart was elected Librarian; and the whole of the officers-elect were installed.

Rules regulating the library have been adopted, and the members are all eager to avail themselves of its privileges. Music still remains a prominent feature at the sessions. Mr. E. C. Frizzell was appointed to bring in a question for extemporaneous discussion at the next meeting. This departure from the usual routine always insures a lively time.

The regular debate for the next meeting is something about denominational and State institutions. ATEB.

The following is a part of the Journal of the Senate, as conducted by the Webster Society last Saturday evening:

The Committee on Railroads reported unfavorably to allowing an appropriation to the Northwestern Railroad.

The Ways and Means Committee reported on the appropriation to the Emporia Normal School. They amended the original bill by materially reducing the amount of the appropriation.

The Committee on Education had lost a bill referred to it, and the person introducing it was allowed to present a similar one to take its place.

A message from the Governor recommended the passage of an act punishing all persons destroying birds of any kind.

The resolution regarding the amendment to the U. S. Constitution, which had been laid over, was now taken up. After a lengthy debate the yeas and nays were taken, and the resolution passed by a majority of ten to seven.

Senate Bill No. 2, regarding the Northwestern R. R. received the third reading. Also Senate Bill No. 3 appropriating to Normal School at Emporia. Senate went into committee of the whole and after a stormy debate passed the Emporia bill as presented, with the exception of the provisions for a gymnasium and for several assistants.

Returned to order of unfinished business and purchased "The History of the Centennial" for the Society library. REPORTER.

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

Kansas Farmer, Topeka. The State Agricultural Journal. In its 14th year. Eight pages; weekly. Sample copies free. J. K. Hudson, Editor. 22-3m

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Expositor. Concordia. Only home paper in county. Large circulation. Large patronage. Independent. $1.00 a year. J. S. Paradis, Editor and Proprietor. 33

News, Girard, Crawford coumty. A Democratic weekly paper published at the county seat of Crawford county, $1.50 per year. Tipton & Lamoreaux, Editors.

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

New Century. The temperance paper of Kansas. Published at Fort Scott. Weekly, at one dollar a year. Rev. Jno. Paulson and Jno. B. Campbell, G. W. C. T., Editors. Sargent & Co., Publishers. 47-3m

Independent. Minneapolis, Kansas. Established 1871. The oldest, largest and cheapest paper in the beautiful Solomon Valley. Price $1.50 a year. Politics, independent but not neutral. W. Goddard, Publisher. 43-3m

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

Home Record, Leavenworth, Kansas. Established in 1872. Is the organ of the Home of the Friendless, an Institution founded and controlled by the women of the State of Kansas. Circulation, 3,200. No better medium for advertising in this section. Mrs. C. H. Cushing, Editor. 44-3m

The Annals of Kansas, by Daniel W. Wilder. Published by Geo. W. Martin, Kansas Publishing House, Topeka. Price $5.

H. S. Roberts, M. D.—Office south side of Poyntz Avenue, between Third and Fourth streets. Residence corner of Third and Pierre streets. 16

Mathematics.—Practical, direct and thorough drill in Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics and Engineering. Work in Field, with Tape Line, Chain, Compasses, Transit and Level. The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

Special for Woman.—Special lectures on Farm Economy, by Prof. Shelton, discussing the Dairy, Poultry, etc. Gardening, by Prof. Gale, treating of the vegetable, flower, commercial and ornamental. Household Chemistry, by Prof. Kedzie, consisting of the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc. Special Hygiene, by Mrs. Cripps.

The Atchison Champion.—Daily and weekly. Weekly established, February 3d, 1855. Daily establshed, March 22d, 1865. The oldest and the leading journal of Kansas. Jno. A. Martin, Editor and Proprietor.

During the past month the weekly *Champion* entered upon the twenty-third year of its publication, and on the 28th of the month will enter upon the twentieth year of its publication under the proprietorship of its present editor and publisher. The daily *Champion* will, on the 22d of March, enter upon the thirteenth year of its publication.

The *Champion* was established in February, 1855. It was then called the *Squatter Sovereign*, and was an intense pro-slavery paper. It was purchased in 1857, by a company of Free State men, who continued its old name until February 1858, when the present proprieter purchased the establishment, changed the name of the journal to that of the *Champion*, and has ever since been its proprietor. From that time until the present, this journal has devoted all of its influence, energy and ability to making known the advantages, resources and wants of Kansas. Its circulation exceeds that of any other journal in the State. It publishes more reading matter every day and week, fuller telegraphic dispatches, more complete market reports, and a greater and better variety of news than any paper published in Northern Kansas. It has an established business, hosts of old and true friends and patrons, and advantages in obtaining early and correct intelligence superior to those possessed by any other journal in this section. And its proprietor will in the futnre, as he has in the past, utilize all the resources at his command to constantly improve the journal whose success and prosperity is his highest ambition.

The *Champion* is owned and controlled solely by its editor. Its position is absolutely independent. It has no interest to serve except the interests of the people, and it will be at all times a conscientious and honest advocate of all measures calculated to promote the prosperity of all classes, and an unyielding opponent of whatever conflicts with the well-being of the public.

The *Champion* is the only paper in Atchison or Northern Kansas that belongs to the Associated Press, or that receives full and reliable telegraphic reports. It publishes, each morning, an account of every event of importance transpiring during the previous day in any part of the civilized world. It also furnishes full and reliable market reports received by telegraph, giving the previous day's quotations in New York, St. Louis, Chicago and other eastern cities.

Attention is especially directed to its remarkably interesting and valuable letters from the State Capital during the sessions of the Legislature. These have never been equalled in fullness of detail, vigor and independence of criticism, and general interest, by the correspondence of any other journal in the State.

The *Champion* is Republican in politics. It has always been, and it expects to continue its advocacy of the principles of that party in the future. It has faith in the progressive policy of the Republican organization, and that it will continue to deserve the support and confidence of the best and most intelligent people of the country by the position it assumes upon all questions affecting the welfare and happiness of the people or the liberty and honor of the Republic.

After nineteen years of assiduous effort on the part of its proprietor, the *Champion* is established on an absolutely sound and permanent basis, which no possible contingency can effect. That the people, not only of this city but throughout the State, appreciate his endeavor to build up a first-class journal, is evidenced in the extent of the patronage given the *Champion*.

We are always glad to hear from the people, and to discuss topics which interest them. Our columns are always open and ready to welcome their communications, for we aim to make the *Champion* emphatically the people's newspaper. Correspondence on any and all topics of general interest is solicited, from any and all parts of the State. Letters detailing facts in relation to the growth and development of the country or towns, or communicating intelligence respecting the crops, industries, manufactories, commerce, or current events in any part of the State, are especially invited.

Terms, postage prepaid.—Weekly, per annum, $2.00; in clubs of ten, (in advance,) $1.50. Daily, per annum, $10.00; six months, $5.00. Daily, delivered by carrier, (per week,) 25 cents.

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial Pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; in Book-Keeping and Practical Law. Words, numbers and lines are the tools used by all industrialists in conveying or preserving ideas; and our endeavor is to make the student a ready workman in the art of using these tools for practical purposes, rather than to make him a critic of fancy English or a professor of abstract Mathematics.

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The course of study for woman is more practical, and, therefore, more sensible than that found in any other institution in the United States. The studies are shaped with reference to the liberal and direct education of woman as a woman instead of as a man, and as an industrialist instead of a butterfly. Among the special features of the course are Physiology and Special Hygiene, Household Economy, Farm Economy, Gardening, Household Chemistry, etc.

The workshops include those of the Milliner and Dress-maker, Printing, Telegraph, Scroll-Sawing, Carving, Engraving and Industrial Music.

Superior advantages are offered to students of higher Chemistry, to Mineralogists, Druggists, Operators, and Workers in metals.

Full collections of the Plants, Insects and Birds of Kansas, are being made as rapidly as possible.

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No contingent fees, except for use of pianos and organs in the Musical Department; and a charge of $1.00 per month for material and instruments used by male students in Printing and Telegraph Departments. Boarding ranges from $2.75 to $4.00 per week.

CALENDAR:—Winter Term began Thursday, January 4th, 1877, and closes May 23d, 1877.

For further information, apply to
J. A. ANDERSON, President.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, MARCH 31, 1877. No. 50.

THE INDUSTRIALIST.
Published every Saturday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
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Illuminating Oils in Michigan.

[A Lecture delivered before the Legislature of Michigan, January 25, 1877, by R. C. Kedzie, Member of the Board of Health.]

Senators and Representatives: I thank you for this opportunity to address you on the subject of illuminating oils, and in behalf of the State Board of Health to present a plea for the safety and lives of the people of this commonwealth.

Before our law creating the office of State Inspector of Illuminating Oils was enacted and enforced, the newspapers were filled with recitals of deplorable accidents from the use of coal oils of low grade. You could scarcely take up a daily paper of our State without seeing the startling head line, "ANOTHER KEROSENE HORROR." People got the idea that such calamities were the natural if not necessary result of using the inflammable material. But since this law has been enforced, scarcely a single accident has occurred in the use of kerosene in our State. So complete has been the change that the people are fast forgetting the terrible history of the past, and many are now demanding a retrograde step towards the former conditions of danger. Nor has the good effects of our law been confined to our State. Other States have followed our lead and enacted similar laws for protection of the public. Even States which have not passed such laws have felt the benefit of the exposures here made of the villainous Ohio inspection, because the refiners were compelled to make a better oil and inspect with more care. Thus the protection which your wise legislation has afforded the people of our State has carried a certain degree of protection to neighboring States. Michigan stands in the front rank of States in the protection she has thrown around the lives and property of her citizens, and a backward step on our part will cause increased insecurity in other States.

So far as security to person and property is concerned the people of our State are to be congratulated: so far as the burning quality of most of our oils is concerned, they are to be pitied. The "people sitting in darkness," but (thanks to our law) not "in the land of the shadow of death," have still a right to demand something better than the wretched stuff so generally sold as kerosene. They do right in complaining and demanding a change for the better. But the change must be one that will effectually remove the evil without impairing the public safety. Kerosene is emphatically the illuminating material for the masses. Outside the cities and large villages it is almost the only material used for artificial light. Legislation on this subject therefore reaches almost every home in our State, and any legislation which shall increase the danger in its use, or diminish the present conditions of safety, will cast a shadow over the homes of the great mass of our citizens. Every one is interested in securing safe tests for an article in such general use. The question does not alone concern the safety of the family using it, but the community are also interested. In the Farmer's Institute at Grand Traverse, where this subject was brought up, Judge Ramsdell said: "Every one is interested in securing safe oil. The question does not alone concern the safety of the family using it, but the community are also interested. If any family in this village uses unsafe oil, *the whole village is endangered;* if by the use of low grade oil a man sets his house on fire, the whole village may be wiped out; and if the wind is high and in the right direction, no human power could save it." It is said that the great Chicago fire originated in a cow's kicking over a kerosene lamp. If the oil had been good Michigan test oil instead of the inflammable material it was, the fire might have been extinguished, and the greatest fire in modern history might have been avoided. Chicago learned to her cost that she had an interest in the quality of kerosene used by her humblest citizens. Even if people say they are willing to incur some risk of personal safety for the sake of better light, it is not the part of wise legislators to aid and abet such incendiary and suicidal cravings, provided some better and more effectual means can be provided for removing the evils complained of.

Before speaking of the qualities of illuminating oils, let me call your attention to the method of refining oil, because this will aid us in understanding many points involved in the oil question. In order to intelligently enter upon this subject, I visited Cleveland last month and spent several days at the refineries, in order to become familiar with the details of this process.

PETROLEUM.

Petroleum is the crude material as it is pumped from the earth. This is brought from "the oil regions" of Pennsylvania, in the vicinity of Titusville and Oil City, but large quantities are now brought from Butler county. The Butler county petroleum has been in use only a short time, and differs from the petroleum in other parts of Pennsylvania in having a very large amount of paraffine. This fact may help to explain the large amount of paraffine found in our kerosene of late. Petroleum is also largely produced in West Virginia.

REFINING.

Refining consists in separating the complex materials contained in petroleum, by distilling and condensing. The crude petroleum is placed in large iron stills made of boiler-plate, which resemble steam boilers. They vary in size from 85 barrels to 1,000 barrels. The stills are heated like steam boilers, and the vapor produced is condensed in condensers made of gas pipe, which are placed in long wooden boxes filled with cold water. These boxes are usually 4x4 in cross section, and are 200 to 250 feet long; in the bottom of this box the iron condensing pipes are placed side by side and run the whole length of the box; a stream of cold water enters one end and is discharged as warm water at the end nearest the still. The condensing pipes all end in a "receiving house," and the condensed products of distillation are received in troughs, from which they run into large cisterns for storage, being run into different cisterns according to their quality, especially their specific gravity.

When the still is heated up by the fire, the petroleum soon begins to boil and the lighter products pass off in the form of vapor; then heavier materials pass over in the form of vapor; and last of all some tarry matter is left in the still. The first materials which are vaporized are not condensed by cold but escape as gas; then a very volatile oil passes over which may be condensed by a freezing mixture, but not by cold water. This oil boils at 65°, and produces very intense cold by its evaporation. It is called Rhigolene (frost oil) from the cold it produces when rapidly evaporated. Used by dentists and surgeons to destroy the nervous sensibility by freezing the part. Here is some of the oil. It is exceedingly dangerous because it is one of the most volatile and inflammable liquids known. If this bottle should break in this room, with all these lights burning, an explosion would be the natural result. Mr. Stearns' drug store in Detroit was burned a few years ago by means of Rhigolene: a boy carried a tray filled with bottles of this oil down cellar; he probably dropped the tray, for a crash of breaking glass was heard; the inflammable vapor almost instantly reached the furnace and the cellar was at once filled with flame, so that not a single person escaped from the burning cellar, and those in other parts of the store had great difficulty in escaping.

Rhigolene is not saved at the Cleveland refineries, but escapes with the incondensable gas (Cymogeme). The first products of distillation saved at the refineries are stored together under the general name naphtha till the density of the liquids distilled reaches 63° Beame of the coal oil hydrometer. The products of distillation from this point are stored in another reservoir under the name of kerosene, and it continues to be stored as kerosene till the gravity becomes 51° Beame. At this point a heavy oil containing a large amount of paraffine oil comes over in the last part of the distillation of kerosene. A quantity of tarry matter remains behind in the still, which is usually distilled in a separate retort, and affords more paraffine oil, and leaves a heavy coke behind in the retort.

According to Prof. Chandler, one hundred parts of crude petroleum will yield sixteen and one-half parts of naphtha (including gasoline and benzine), fifty-five parts of kerosene, nineteen and one-half parts of paraffine oil, and ten parts of coke, etc. But Cleveland refiners claim to do bet-

[Continued on fourth page.]

THE INDUSTRIALIST.

SATURDAY, MARCH 31, 1877.

JNO. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

The Latest Improvement in the Telephone.

Many of our readers have doubtless watched with keen interest and no little perplexity the chaotic accounts with which the press of the day is filled concerning the newly-discovered Telephone, which promises to work so radical a revolution in our method of transmitting messages. By far the best illustrations of the apparatus which we have lately seen will be found in the last number of the *Scientific American*, though the article accompanying these illustrations is anything but lucidly written.

The discoverer of the Telephone proper is Prof. A. G. Bell, of the Boston University, who has devoted himself wholly to the transmission of vocal sounds. Prof. Bell is a Scotchman by birth, and has been a resident of this country for the past few years only. This Telephone as developed by Prof. Bell must not be confused with a modified form of the same instrument for the conduction of musical tones, recently perfected and brought out by Mr. Elisha Gray, of Chicago. Bell's Telephone, as exhibited at Philadelphia during the early part of last summer, required for its operation as powerful a battery as for a telegraphic circuit; since which time the very remarkable improvement has been introduced of abolishing the battery entirely and substituting therefor induced electric currents from a large permanent magnet.

We need hardly state that the Telephone involves no new principle. In the year 1831 Faraday discovered that when a soft iron armature wound with coils of insulated copper wire was suddenly approached by the poles of a powerful permanent magnet, the soft iron bar became suddenly magnetic by induction and a current of induced electricity instantly passed through the coil; on suddenly withdrawing the magnet again a similar electric current passed instantly through the coil in the opposite direction. With this experiment in mind the Telephone is easily understood. The whole apparatus is embraced in a box twelve inches long, and seven inches wide and high, and is arranged as follows: A tube and mouth-piece open into the box at one end against a thin sheet of iron or steel, which is firmly screwed by its edges in place and completely fills one end of the box. Upon the opposite side of this thin iron plate, and filling the body of the box, is a powerful compound magnet so arranged that its distance from the iron plate may be nicely adjusted by a thumb-screw. Around the poles of this magnet are wound coils of insulated copper wire, whose poles may be connected with the earth on the one hand and with an ordinary telegraph line on the other. Supposing that along this telegraph line we have arranged at the various offices, say at intervals of fifty miles, an apparatus quite similar to the above, the last station also having a ground connection, we shall then with the copper coils and the line wire have a complete circuit. The *modus operandi* is as follows: The mouth of the operator is placed at the speaking-tube of the first instrument and the word is pronounced; the air waves produced by the sound of the voice will cause the thin iron resonator to vibrate powerfully, and this playing before the poles of the permanent magnet will induce electrical currents in alternate directions in the copper coils, which will be carried through the entire circuit; the iron resonators at each station will begin to vibrate and the sound pronounced at the first station will be distinctly heard proceeding from the tube of each instrument. As everything depends on distinctness of utterance, it has been found, as might be expected, that low, clear sounds are much more distinctly heard at a distance than those which are loud but harsh. With this instrument Prof. Bell has carried on perfectly intelligible conversation with an assistant one hundred and forty-three miles away. By a system of artificial resistance, he has also conversed plainly through a wire offering a much greater resistance than the entire Atlantic cable; but as there are other difficulties in the way besides that of resistance, the instrument will require to be still further improved before it can be applied to trans-oceanic messages.

From the nature of the instrument it is evident that, by the employment of resonators responding to different keys, almost any number of messages may be transmitted over the same wire in either direction at the same time. In fact, even now in its infancy, the invention is an undoubted and decided success, and the revolutions which it promises to bring about in telegraphic matters need hardly be enumerated. First, in the matter of expense: the battery is done away with, and the whole instrument need not cost half the outfit of an ordinary telegraph office. Second, in the item of rapidity: the message is transmitted as rapidly as the sounds can be distinctly uttered. Third, its simplicity: no expensive operator is required to manipulate an instrument which simply needs to be talked at.

Indeed, it requires no prophetic eye to see, in the course of the next few years, a complete overturning of our present system of telegraphy; though it may, perhaps, hardly warrant the somewhat heartless advice of an eastern editor who recommends all muscular telegraphers "to secure in advance desirable locations for making cross sections of vegetable fibre on a sawbuck." But, all trifling aside, we cannot do otherwise than concede to this little instrument, while in no sense of the word a discovery, a rank among the greatest and most promising inventions of our age and country.—[*Prof. Kedzie.*

THE Short-Horn cow, 10th Duchess of Geneva, bought by Lord Bective for $35,000 at the New York Mills sale in 1873, and lately dead, gives occasion for the English press to say that, notwithstanding her early death, she has proved a good investment to the purchaser.

THE *Emporia News* says that in these hard times there is a great deal of comfort in the thought that an acre of land will produce just as much corn, and a bushel of corn just as many pounds of pork, as in the flush of business after the war or the days of specie payments before it.

EXPERIMENTS show that the amount of meat obtained from the domestic animals varies greatly, some yielding as much as 80 per cent, while others give only 50 per cent. The average is calculated at 58 per cent on the live weight of beef cattle, while sheep give but 40 to 50 per cent.

NOTWITHSTANDING the depression in the live stock trade, whenever really fine cattle (gilt-edged) come to the surface, they have promptly commanded large prices. Mr. John D. Gilbert, the well known Logan county breeder and feeder of high grade Short-horn cattle, sold 128 fat steers, averaging 2,100 pounds, at 7c. gross. These were fed in the usual way, out of doors, and not tied up, or, as it is termed, stall fed. Another sale of extra cattle, five head fed by Mr. E. A. Bissell, of Richmond, Mich., which averaged 2,300 pounds, were sold at Detroit. These are claimed to be the five heaviest three-year-old steers in the Northwest.—[*Prairie Farmer.*

Short-Horn Sales of 1876.

We give from *Short-Horn Reporter* the following condensed report of sales of Short-Horn cattle for 1876:

Illinois takes the lead with 25 sales, 1,230 head sold for $404,385, average $329.

Iowa next, had 20 sales, 1,123 head sold for $344,160, average $307.

Kentucky 18 sales, 1,011 head sold for $276,725 average $236.

Missouri 6 sales, 125 head sold for $29,555, average $236.

Canada 5 sales, 179 head sold for $124,985, average $643.

Ohio 3 sales, 135 head sold for $34,635, average $257.

Indiana 2 sales, 92 head sold for $24,595, average $367.

Kansas 1 sale, 44 head sold for $7,195, average $181.

New York 15 head sold for $9,535, average $436.

Minnesota, 9 head sold for $5,985, average $665.

Wisconsin, 12 head sold for $1,405, average $117.

Pennsylvania, 18 head sold for $4,035, average $225.

Connecticut, 11 head sold for $1,840, average $167.

Grand total, 4,014 head sold for $1,266,805, average $341.

THE INDUSTRIALIST.

SATURDAY, MARCH 31, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending March 30th, 1877.

DAY OF WEEK AND MONTH.		Temperature. Max.	Min.	Mean.	Bar. Mean Hight.	Inches of Rainfall.
Saturday	24	38°	15°	27°.	29.01	
Sunday	25	59	30	48	28.78	
Monday	26	58	34	49. 75	28.69	
Tuesday	27	64	34	52 25	28.77	
Wednesday	28	58	37	48. 75	28.80	
Thursday	29	47	36	43.	28.81	
Friday	30	47	37	47. 50	28.53	2.10

Average temperature for the week, 45°.18.
Range of temperature for the week, 53°.
Rainfall for the week, 2.10 of an inch.

Number of students enrolled this term, **175.**

Since our last issue, Thomas J. Womack, of Russell, Russell county, and Charles E. Romberger, of Riley county, have been assigned studies.

Quite a number of strangers have visited the different departments of the College this week, and all spoke very highly of the work that is being done.

During the storm of Thursday night, two and one-tenth inches of rain fell, to the great delight of farmers and house-keepers with empty cisterns, and to the great disgust of the hoppergrasses.

Willie Peckham and E. C. Frizzell, two of our best students, have left College. The former has been employed as clerk in a hardware store in Clay Center, and the latter has entered a music store in Topeka.

All hands have been busy as bees putting the nursery stock in readiness for the sale which begins next Wednesday. The trees are grouped in "lots" containing several different varieties, and will be sold by the lot.

Our young friend, Logan W. Everhart, who left College a few weeks ago, was called to witness the death of an older brother a few hours after arriving home. Logan has the sympathies of his friends here in this sad and sudden affliction.

E. L. Thorpe will preach in the Methodist church next Sunday morning. We understand that friend Ervin is soon to enter a theological school in Boston. He is a young man of considerable ability, great energy and industry, and we wish him success.

On account of the busy season which always follows the appearance of spring, several of our students — farmers' sons — have been compelled to exchange their studies for the plow handle and the grain drill. If they work as faithfully at home as they do while here, we don't wonder that they are missed.

Parties desiring to purchase trees, shrubs, etc., at a low price and of good quality, should not forget the auction sale at the College nursery next Wednesday, April 4th. Cash will be required for all sums under ten dollars, and for all sums over that amount, a credit of twelve months, with interest at twelve per cent per annum, will be given with approved security.

D. A. Beamer will hereafter furnish the reports from the Alpha Beta Society, a duty which G. H. Failyer has creditably performed for some time. Mr. Beamer's *nom de plume* will be "D. A. Z.," which, considering the extreme beauty and delicacy of the gentleman, we interpret to mean d-ai-sy. Irving Todd is reporter for the Webster Society, and deserves credit for the spice and vigor which characterize his reports.

The Alpha Betas propose to turn their Society into a moot-court next Friday afternoon, April 6th. At this time the celebrated breach of promise case between Isabelle Winnington (Miss Cora Neale) and David Murray (J. S. Griffing) will come up for trial before His Honor, A. A. Stewart. G. H. Failyer and Wm. Ulrich are attorneys for the plaintiff, and W. C. Howard and D. A. Beamer will appear for the defense. The public generally are invited to attend.

At the urgent request of some Manhattan people, Prof. Platt and his singing class have consented to repeat the entertainment given at the College chapel a week ago. All who desire to hear this class sing, and who really enjoy good music, should be present at the Christian church next Tuesday evening at eight o'clock. Admission, 25 cents; and it is worth just twice that amount to hear those four great frogs exercise their lungs in the attempt to make musical tones.

We clip the following locals from the last *Nationalist*:

Mr. Carr, of Leavenworth, has been in town for a few days preparing plans for the College barn, which is to be built on the side hill north of the nursery and west of the ravine, with yards running down to the water.

C. V. Riley, Professor of Entomology at the Agricultural College, is chairman of the grasshopper commission just appointed by President Hayes. It is a wise selection, and we are confident that great good will result from the labors of the Board. Prof. Riley takes for his special field the country east of the mountains, and south of the 40th parallel of latitude.

AUCTION SALE OF NURSERY STOCK AT THE AGRICULTURAL COLLEGE.

April 4th, 1877, Commencing at 10 O'Clock, A. M.

In order to effect important changes in the College grounds, it has been found necessary to dispose of the entire nursery stock immediately. Hence, we offer at auction, in assorted lots, apple, pear, cherry, peach and plum trees; currants, gooseberries, blackberries; a fine lot of rhubarb roots; a quantity of flowering shrubs, evergreens, and other ornamental shrubs.

Terms: — Cash for all sums under ten dollars. For sums over ten dollars, a credit of twelve months, with interest at ten per cent per annum, will be given on approved security.

E. GALE, Sup't Hort. Dep't.

Manhattan, Kas., March 23d, 1877.

Students' Column.

Although the weather was cold and stormy on last Friday, the Alpha Betas had a good attendance and an agreeable meeting. They debated with considerable earnestness the question, "Are denominational institutions of education preferable to those of the State?" They next propose to give their exalted opinion as to whether or not ladies should be admitted to theological and law schools.

Extemporaneous speaking was indulged in with the usual instructive results, after which the *Gleaner* was read.

Under miscellaneous business considerable excitement was raised, which culminated in the moderate chastisement of "our critic."

The session was short but none the less pleasant and profitable. D. A. Z.

The following is an extract from the journal of the Webster Senate:

Senate Bill No. 2, appropriating $250,000 to the Northwestern Railroad, was first taken up. King and Leasure spoke in favor of the bill, and Salter in favor of all but the clause providing for bond-voting by the counties. Several Senators, including Williamson, DeForest and Gist, expressed themselves as strongly opposed to the bill. An amendment cutting out the proviso for bond-voting was proposed and seconded. Harvey spoke against the amendment and Williamson for it. Leasure being interrupted in his speech waxed wroth and threatened to fire chairs at Williamson. Finally, he was pacified and the debate proceeded. The amendment was passed by a majority of seven to three. Moved and seconded that the committee of the whole recommend the bill to be rejected by the Senate. In debating on this motion, a lively cross-fire of personalities and hard names was enjoyed. The motion to recommend to reject passed. The yeas and nays being called for, the bill was rejected by a majority of one.

Senate Bill No. 5 was next considered. After some explanation it was decided by the chairman that, owing to the irregularities of the bill, the Senate had no power to act on it.

This exhausted the bills, and there was some discussion in regard to discontinuing the legislative meetings. A motion to that effect was lost.

Under Society business, a vote of thanks was returned so Senator Harvey for a donation of books; also to the INDUSTRIALIST "management" for a bound volume of that paper. REPORTER.

[Continued from first page.]

ter work than this—that they can get 70 to 75 barrels of kerosene from 100 barrels of petroleum.

The first materials which are condensed are the lightest and most combustible—the density of the liquids increases constantly as the distillation proceeds, and their combustibility as constantly decreases, till we reach the paraffine oils, when the combustibility very rapidly decreases, and the oils become very difficult to burn in ordinary lamps. The naphtha and the paraffine oils bring but a small price in the market, because there is very little demand for them compared with the amount produced. On the other hand, kerosene is in very large demand and commands a good price. Paraffine oil is worth about ten cents a gallon, and naphtha three or four cents. There is so little demand for naphtha that the Standard Oil Company were burning it instead of coal to heat their retorts in refining petroleum. The refiner finds, therefore, for his lightest and heaviest products but small demand and little profit; for his middle products, a large demand and heavy profits. The difference between naphtha and kerosene is not *in kind, but in degree.* The dividing line between heavy naphtha and light kerosene is a perfectly arbitrary one; the difference is that the naphtha is a little more volatile and inflammable than the kerosene. The refiner, then, is tempted to run into the kerosene as much naphtha as he can, to increase his profits. He finds this lowers the test, and to bring up the test he runs in some of the paraffine oil, which brings up the test. I have brought up the test of an oil 14° by adding paraffine. He can thus make a profit both on his naphtha and paraffine oil. If he can run into each barrel of kerosene 5 gallons of each of these adulterants, he will make a clean profit of more than $2 on each barrel of oil. In works where 6,000 barrels of oil are refined every day the profits on such an operation would be enormous. Perhaps it would not be possible to practice so large an adulteration, especially as regards the naphtha, but I have the best of reasons for believing that a very large amount of paraffine oil is thus added to Michigan oil, and the refiner's profit on every gallon of paraffine oil added to our oil is not less than 20 to 25 cents. There is nothing in our law which will prevent the refiner adding all the paraffine oil he chooses.

[Continued next week.]

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26–3m

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

Record, Beloit, Kansas. A real-estate paper. 25 cents per year. Tells all about northwestern Kansas. Kelly & Bertram, Proprietors.

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26–3m

Expositor. Concordia. Only home paper in county. Large circulation. Large patronage. Independent. $1.00 a year. J. S. Paradis, Editor and Proprietor. 33

News, Girard, Crawford coumty. A Democratic weekly paper published at the county seat of Crawford county, $1.50 per year. Tipton & Lamoreaux, Editors.

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

New Century. The temperance paper of Kansas. Published at Fort Scott. Weekly, at one dollar a year. Rev. Jno. Paulson and Jno. B. Campbell, G. W. C. T., Editors. Sargent & Co., Publishers. 47-3m

Independent. Minneapolis, Kansas. Established 1871. The oldest, largest and cheapest paper in the beautiful Solomon Valley. Price $1.50 a year. Politics, independent but not neutral. W. Goddard, Publisher. 43-3m

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

Home Record, Leavenworth, Kansas. Established in 1872. Is the organ of the Home of the Friendless, an Institution founded and controlled by the women of the State of Kansas. Circulation, 3,200. No better medium for advertising in this section. Mrs. C. H. Cushing, Editor. 44-3m

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, APRIL 7, 1877. No. 51.

THE INDUSTRIALIST.
Published every Saturday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Illuminating Oils in Michigan.

[A Lecture delivered before the Legislature of Michigan, January 25, 1877, by R. C. Kedzie, Member of the Board of Health.]

[Continued from last week.]

But the influence of this paraffine oil on the burning quality of kerosene is very injurious: the lamp burns dimly, the wick chars and gums up, and the light will often go out before half the oil is consumed; when the light is extinguished, a stifling smoke escapes from the charred wick. When such oil is cooled to a low temperature, the paraffine will separate, and the oil becomes white, thick, and turbid, or even becomes solid, like lard. I have a specimen of such oil bought for my own use, which I could not burn with any satisfaction; it was from the Standard Oil Company, and sold as "Michigan State Oil." By chilling and filtering I extracted four ounces of solid paraffine from one quart of the oil, or a pound to the gallon. Here is the paraffine taken from one quart. From all parts of the State we hear complaints about the oil freezing: in some places they have to get the barrels in by the stove and thaw the oil before they can pump it out. From the same quarters we hear the complaints that the oil will not burn. *That is not Kerosene!* There may be some kerosene in it, but it is essentially paraffine oil. No oil containing so much paraffine oil will burn in our ordinary lamps, no matter what is the inspection test. Here is a lamp which contains some of the 120° oil, for which people are petitioning, to which I have added some paraffine oil, and you see how it burns. Suppose you reduce the test to 120°, and suppose the refiners find it for their interest to reduce the test still lower, they may find it to their interest, as they certainly do to their profit, to run into the 120° oil enough paraffine oil so that it would not burn satisfactorily, and the people would again demand a reduction of the test, so that they could have an oil that would burn. The refiners, through their agents, tell the people that it is our high test that causes the oil to be of such wretched quality. I venture to say that our high test has no necessary connection with this poor burning quality. I have some oil which is "legal test" which burns as brightly as any oil I ever used. I have placed here side by side two lamps exactly alike and trimmed in the same way in all respects except that one contains a pure water-white oil, free from paraffine, which flashes at 141°, and is therefore a little above our test, while the other contains a "water-white headlight oil" which flashes at 115°. They have both been burning here undisturbed for more than an hour; tell me which gives the best light. Several voices say "No. 1," and one says "No. 2." You are not unanimous in your opinions, and this shows that there is very little difference between the lamps, so far as the quality of light is concerned. Lamp No. 2 contains 115° oil, and No. 1 contains our heavy 141° oil, yet a majority say that this gives the best light. This demonstrates that the poor burning quality of "Michigan test oil" has no necessary connection with our high test. But the oil in lamp No. 1 contains so little paraffine that when it is cooled for hours down to zero it remains perfectly clear and transparent. It is because our oils have been adulterated with paraffine oil that they will not burn. I do not care how high the test is, if the oil is free from this paraffine oil it will burn well, and if any oil is heavily laden with paraffine oil, I care not how low the test, it will not burn well. Here are two lamps exactly alike and trimmed in the same way, and filled with oil from the same barrel, but the oil in one lamp contains the same amount of paraffine as was found in the oil, while the paraffine has been extracted as far as possible from the other by chilling and filtering. You can judge of the influence of the paraffine on the burning quality by comparison of the flames of these two lamps.

The presence of paraffine has a singular power of lowering the capillarity of oil. I tried the following mode of comparison: I took several glass tubes of the same size, and placed some candle-wicking inside the tube. The wicking was thoroughly moistened with oil, and the flame continued to burn steadily at the top of the tube. With good Michigan test oil, I found that the lamps would burn for hours at the height of 93 millimetres (3⅝ inches) above the surface; but with paraffine-laden oil only at 7 millimetres (¼ inch); after chilling the oil and filtering out the paraffine, the flame would burn at 80 millimetres (3⅛ inches) above the surface; the capillary power by which alone the flame is fed, is therefore more than ten times as great after the paraffine had been removed. This explains why it is so difficult to make a lamp burn for a long time which contains this paraffine oil; the capillary power is too feeble to draw up this thick oil in sufficient quantity to sustain the flame and the lamp goes out before half the oil is consumed. This evil is often increased by the form of the lamp in most general use. The lamps are usually globular in form, and when only a small part of the oil in the lamp is consumed, the distance between the surface of the oil is much increased, thus increasing the distance through which the oil must pass by capillary action. If the flames were flat-topped, and with a shallow well like these before you, the deficient capillarity of the oil would not be so evident. Another cause which makes these oils burn so poorly is the use of too small and hard-twisted wicks. If folks would use No. 2 burners, with very soft and porous wicks, they would find less trouble with their kerosene. More light is given with a No. 2 burner than with a No. 1, with the same consumption of oil.

Another fact does not seem to be generally known, although I pointed it out nearly two years ago, viz.: that kerosene rapidly deteriorates by exposure to sunlight. Here are two bottles of kerosene, one clear as water, and the other dark yellow; yet they were filled from the same can of kerosene, and have stood side by side for several weeks; one was exposed to sunlight, while the other was wrapped in paper impervious to light. In one bottle the sunlight has changed a part of the oil to a tarry substance, which remains dissolved in the oil and colors it yellow, while no such change has taken place in the other. If I add some sulphuric acid to this yellow oil, quite a heavy deposit of tarry matter will form, but none in the other oil. Any kerosene long exposed to sunlight will burn less freely, and all lamps should be kept in a dark closet when not in use. But manage our lamps as we may, if we have poor oil we shall have poor light. The people justly complain of the quality of the oil; it is an outrage to palm off such stuff for kerosene oil. The refiners who are the authors of this outrage coolly reply that this poor burning quality is a necessary effect of our high test, that we can never have a good oil with our present test, and that the way, and the only way, to remove this evil is to reduce our test. I readily concede that the light products of distillation will burn more freely than the heavy products. The most freely burning of all these oils is rhigolene, but you might as safely burn gunpowder. Gasoline and naphtha will burn better than any kerosene. The low test kerosene will burn more freely, other things being equal, than high test. The question is not which will burn the most readily; for if that were the question we would select naphtha at once, which will burn better than any kerosene. The question is, can we have an oil that is safe to use, which will burn sufficiently well for all practical purposes? I answer, we do have such oil in certain grades of water-white oil (*i. e.* oil free from paraffine), as you may see by this lamp before you. This lamp very plainly disproves all the statements of the oil men that we cannot have a good oil with our high test. There is no trouble in making such oil, the only trouble is that it is not so profitable to make as the low grade kerosene. If naphtha and paraffine oil should ever become more valuable and saleable than kerosene, we shall hear no more about the difficulty in making Michigan test oil, or any complaints that high test oil will not burn freely. Till that time comes, we must watch the refiners and receive their statements with due allowance, because they are interested parties.

The people also complain because the high test oil is more costly. Of course, no intelligent man will claim that the remarkable advance in the price of kerosene all over the country during the last year, has any connection with our high test. This is the result of a combination of the principal oil refiners, who control the market.

[Continued on fourth page.]

THE INDUSTRIALIST.

SATURDAY, APRIL 7, 1877.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Coal Oil.

Last week we began the publication of a speech delivered before the Michigan Legislature by Prof. R. C. Kedzie, member of the Michigan State Board of Health and Professor of Chemistry in the Michigan State Agricultural College, upon the subject of coal oil as an illuminator. For some years this gentleman has been making numberless experiments for the purpose of determining the exact conditions under which coal oil may be safely handled. As a result of these investigations, the Michigan Legislature passed a law in 1875 providing for the inspection of coal oil, and forbidding the sale or use for illuminating purposes of any article grading less than 140°. The very startling reduction in the rate of deaths from lamp explosions and in the destruction of property by fire, caused by the enforcement of this act, has excited great interest in other States. The law has greatly excited the manufacturers of coal oil, especially those of Ohio. It compelled them to furnish an article on which much less profit is made than on that which finds ready sale in other States. Accordingly, they organized a strong lobby working on the present Michigan Legislature for a reduction of the test point from 140° to 120°. This speech is a reply to that attack, and its thorough exposition of the whole subject cannot fail to do good both within and beyond the boundaries of Michigan. The manufacturers are the only parties having a financial interest in the matter, as they obtain from jobbers the same price for other oil as that received for the "Michigan oil," and retail merchants of course make the same profit on either article.

We call the attention of our legislators to this matter. A great proportion of the oil sold in Kansas is liquid hydrophobia on the rampage. Not a week passes without the newspaper record of the loss of life and property which would not have occurred had the Michigan test oil been used. Mrs. O'Leary's cow would not have kicked Chicago into ashes had that historic matron's lamp been filled with oil of the Michigan grade. Every night of every month every house in Kansas is endangered far more than it need to be through the shrewd endeavor of manufacturers to make a greater profit than they ought to make. We adore these gentlemen. Our desire that they may roll up the profits amounts to a passion; but then that passion is as the frigidity of the north pole to the fervency of the equator when compared with the love we have for the children, wives and property risked for the pockets of those Cleveland chaps. Let us have a safe oil.

To School Teachers.

DEPARTMENT PUBLIC INSTRUCTION,
Topeka, Kas., March 15th, 1877.

There will be a meeting of the State Board of Education in the State Normal School building at Emporia, on Thursday, the 28th, and Friday, the 29th day of June next, for the purpose of examining candidates for State Diplomas, State Certificates, and certificates of special qualification for institute work.

The examination, chiefly written and partly oral, will begin at 8 o'clock, A. M. and close at 6 o'clock P. M. of each day.

PROGRAMME OF EXAMINATION EXERCISES.

THURSDAY, JUNE 28, 1877.

8 A. M. to 8:30 A. M.—Inspection of Testimonials.
8:30 A. M. to 9:30 A. M.—Reading.
9:30 A. M. to 11 A. M.—Arithmetic and Book-Keeping.
11 A. M. to 12 M.—Elements of Physiology.
2 P. M. to 3:15 P. M.—English Grammar.
3:15 P. M. to 4:30 P. M.—Geography and Map Drawing.
4:30 P. M. to 5 P. M.—Industrial Drawing.
5 P. M. to 6 P. M.—Elements of Chemistry.

FRIDAY, JUNE 29, 1877.

8 A. M. to 9 A. M.—Elements of Natural Philosophy.
9 A. M. to 10 A. M.—Algebra.
10 A. M. to 10:45 A. M.—Elements of Botany.
10:45 A. M. to 11:15 A. M.—Elements of Geology.
11:15 A. M. to 12 M.—Elements of Entomology.
2 P. M. to 3 P. M.—School Management.
3 P. M. to 3:30 P. M.—Descriptive Astronomy.
3:30 P. M. to 4:30 P. M.—Geometry and Plane Trigonometry.
4:30 P. M. to 5:30 P. M.—Latin.
5·30 P. M. to 6 P. M.—Elements of Chemistry.

QUALIFICATIONS FOR THREE-YEAR CERTIFICATE.

To be entitled to a three-year certificate, the candidate—1. Must pass a satisfactory examination in the following branches:

1. English—including Arithmetic, Spelling, Grammar and Composition.
2. Mathematics—including Arithmetic, Algebra through Simple Equations.
3. Geography—Physical, Political and Mathematical.
4. Elementary Natural Philosophy.
5. Industrial Drawing—Wilson's First Book.
6. United States History.
7. Elements of Botany.
8. Elements of Physiology.
9. Elements of Geology.
10. Elements of Entomology.
11. School Management.

2. Must have taught one year. 3. Must produce satisfactory testimonials from reputable persons in regard to temper, manners, moral character, and professional standing.

QUALIFICATIONS FOR FIVE-YEAR CERTIFICATE.

To be entitled to a five-year certificate, the candidate—1. Must pass a satisfactory examination in all branches required for a three-year certificate, and in Algebra through Quadratics, and Plane Geometry. 2. Must have taught two years, one year of which must have been in Kansas. 3. Must produce testimonials as required of candidates for three-year certificates.

QUALIFICATIONS FOR STATE DIPLOMA.

To be entitled to a State Diploma, the candidate—1. Must pass a satisfactory examination in all the branches required for a five-year certificate, together with solid Geometry, Descriptive Astronomy, and Latin (Grammar, Reader, Cæsar, and Virgil, or equivalents.) 2. Must have taught five years, two of which must have been in Kansas. 3. Must present testimonials, as required of candidates for certificates.

Certificates of special qualification to conduct county normal institutes, or to instruct therein, will be issued to teachers personally known to the State Board of Education to be worthy of the same, and to such others, now holding or hereafter securing State certificates or diplomas, as shall satisfy the State Board of their ability and fitness to do the work successfully.

The attention of candidates is invited to the following rules:

1. Each candidate will be required to present the requisite testimonials before commencing the examination.

2. The examination questions in each branch will be given to candidates at the beginning of the time allotted to the examination in that branch, and at the expiration of that time the written answers will be collected.

3. During examination, candidates shall be seated as far apart as possible, and will not be allowed to communicate with one another.

4. Answers should be brief, but must be complete in logical exposition, and in grammatical structure. The answers in mathematics must show the *process*, as well as the *result*, in each case.

5. In grading candidates, due weight will be given to the character of manuscripts in regard to *penmanship* and *neatness of arrangement of answers.*

6. The standing of candidates in *spelling, composition* and *penmanship* will be determined by the character of their respective manuscripts in these respects.

7. One hundred per centum will denote perfection.

8. An average standing of ninety per centum will be required for a diploma or certificate.

9. The names of successful candidates, and the standing of each, will be announced as soon as they can be determined; and the certificates and diplomas granted will be issued as soon as possible thereafter.

County Superintendents are respectfully requested to distribute copies of this circular to persons interested.

By authority of the State Board of Education.

ALLEN B. LEMMON,
State Sup't of Public Instruction.

We never saw immigration commence so early before in Kansas. Our town is alive every day with the covered wagons of movers going south and west in search of homes.

Plows, harrows and wagons in large numbers are now being sent from this place to the different Indian agencies. It will be a sight for strangers to witness our copper-colored brethren playing farmer.—[*Coffeyville Journal.*

The growing wheat is coming forward finely, the farmers invariably report, and the outlook is very promising. The weather has been quite favorable for wheat this month, but a good rain would help it greatly now, as well as all other vegetation. —[*Wilson County Citizen.*

All wool-growers are loud in their assertions that Kansas is destined to be the greatest wool-growing State in the Union. Her climate and soil makes her a natural silk field. But who considers that these are only raw material for the manufacture? To save expensive transportation out of the State of these products of the soil thus utilized and concentrated by the animal economy, and then like expensive transportation into the State of the fabrics manufactured from our raw material, we need to open our eyes to the necessity of home manufactories. We need paper mills to work up our immense straw stacks. In the State of New York and elsewhere, the farmer sells his straw.

THE INDUSTRIALIST.

SATURDAY, APRIL 7, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER. Agent.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending April 6th, 1877.

DAY OF WEEK AND MONTH.		Temperature. Max.	Min.	Mean.	Bar. Mean Hight.	Inches of Rainfall.
Saturday	31	76°	29°	61°	28.28	
Sunday	1	42	20	35 .25	28.98	Sh'r
Monday	2	45	23	36 .75	29.04	
Tuesday	3	64	31	48 .75	28.62	
Wednesday	4	65	37	50 .25	28.61	
Thursday	5	84	44	65	28.57	Sh'r
Friday	6	75	40	60 .50	28.72	

Average temperature for the week, 51°.07.
Range of temperature for the week, 56°.

Number of students enrolled this term, **175.**

The Executive Committee will meet on Tuesday next.

As we go to press, a genuine spring shower is refreshing the earth.

Senators Dow and Wells, and Representative St. John were at the sale Wednesday.

Last Saturday Manhattan voted school bonds for the purpose of erecting a $15,000 school building.

Major T. C. Henry and Prof. Jewett, of Abilene, spent a day in examining the College this week — very pleasantly to us.

The present warm weather is bringing out both the grass and grasshoppers, and the cattle and chickens may "be glad for joy."

Mrs. Platt said she did not want us to report that she and Mrs. Stiles, of Wabaunsee county, called on us Thursday afternoon. We won't.

The Farm department is actively engaged in spring work; and, in fact, the unusual stir around all the departments indicates that the busy season has come.

Our janitor, Mr. Joseph Davis, has been compelled to resign his position, on account of other business, and the janitor work of the College is now done by several of the students.

Last month the following varieties of trees were planted on the College grounds: 163 large elms, 154 box-elders, 16 large ash, 87 Linden, 2 butternut, and 84 mulberry. The evergreens will be set out this month.

We will guarantee that at the close of this term the present Surveying class will understand what they have gone over. Nearly every afternoon this week, some portion of the class has been out doing field work.

According to previous notice, the nursery stock belonging to the College was offered for sale at public auction last Wednesday. About one-half of the stock was disposed of, and the sale was continued until this afternoon, at which time the remainder will be offered in the same manner and on the same terms.

The city election in Manhattan last Monday passed off quietly and resulted as follows: Mayor — Wm. Dent; Police Judge — De F. Hungerford; Councilmen — Jacob Winne, Wm. Beverly, Orville Huntress, Wm. Knostman and N. A. Adams. A good set of officers have been selected, and we believe the interests of Manhattan will be well guarded by these gentlemen.

We publish below the names of the students who have graded 100 during the past month, and the studies in which they made the grade:

Free-Hand Drawing.—Bernhard Anderson, Albert Copley, A. N. Godfrey, and Miss Carrie King.

Landscape Gardening.—Miss Ella Child and G. H. Failyer.

Butler's Analogy.—G. H. Failyer, W. C. Howard, and Wm. Ulrich.

Instrumental Music.—Misses Ella Child, Emma Eckman, Carrie Jones, and Kate Cotton, and Messrs. Ira Lewis and C. J. Reed.

This is an age of invention, and we have discovered a sure remedy for the removal of that pest of the printing-office — the loafer. When they become too thick to insure healthy growth, we look very grave and stepping up to them privately inform them that we are behind with the paper, must have more locals, and with some flattering remarks request a few productions from their fertile brains. Just then they very distinctly remember that they promised to meet somebody somewhere at this time and depart; or, if they once puzzle themselves for a few moments trying to find an idea in their heads which is not there, they soon plead unwell and leave. This remedy must be applied once a week, for in about that length of time they will again come to the surface and will display as much facial area as ever.

We attended the concert given by Prof. Platt and his singing class at the Christian church on last Tuesday evening. The Professor and each and every member deserve great credit for such carefully selected and well rendered exercises. Among the pieces which we noticed as especially well received by the audience were the following: "Under the Daisies," "Will you love me when I'm Old," "Bells," "The Crows in the Corn-field," "The Girls Will Have Their Way," and a lovely chant, "Thinking of Home," which was called a second time. But we must not forget the laughable "Frog chorus," in which the diminutive but shrill-voiced denizen of the water was determined to drown the guttural notes of his great frogship. For lack of space we cannot particularize as much as we otherwise would, but where all are so equally good it is difficult to discriminate. F.

We took a stroll through the Mechanical department the other day and were surprised at the quality and amount of work which is being done. Besides the various articles which Col. Hawkes was manufacturing for the department, we found several students busily engaged at the turning-lathe, scroll-saw and work bench. Some were sawing out beautiful brackets; two brothers were constructing a large and well-arranged office desk and table; another was making improvements on the clock which announces by telegraph the beginning and closing of each College hour; and still others were finishing centre tables, turning table legs, making mortises, and doing many other kinds of work which a half-fledged newspaper reporter could not be expected to name and define. We also examined some of the extension tables, bureaus, dining tables, wash-stands, etc., which the department has on hand in either a finished or unfinished state, and we know that the work cannot be exceeded anywhere in the State with the same facilities.

Students' Column.

Last Tuesday afternoon witnessed a match game of base-ball between the town club and the College boys. The game commenced at 3 o'clock and lasted till 5:45. The first inning was a decided success for the College club, and they were highly elated. But after this the game was very close. At the close of the game, the College club sported thirty-two runs, sixteen of which were made the first inning, and the town boys had fourteen. The latter are now anxious for another game, and the Bluemonts only wait their challenge. If any club in the neighborhood thinks it's the biggest frog in the puddle, here is the place to be undeceived. THIRD BASE.

In the Webster Senate, last Saturday evening, Senate Bill No. 8 was considered. This was to provide for the introduction of the metric system of weights and measures into Kansas. Williamson was strongly in favor of the bill, and showed the great advantages which this system possessed over the present one. Gist didn't want Kansas alone to adopt this system, as it would cause confusion in trading with other States. Leasure also opposed the bill for substantially the same reason.

After a lengthy debate the yeas and nays were called and the vote stood six to six. Leasure declared that Cox was bribed to vote the affirmative of the question. Cox in defense maintained that he meant to vote negatively. It was moved and seconded that further consideration of the bill be postponed. In debating, many accusations of bribery, "sculduggery," etc., were made. The motion to postpone was lost. After some tall wrangling, the yeas and nays were again taken, and, by proving that one of the opposers of the bill was not a voter, the supporters of the act gained their cause by a majority of one.

REPORTER.

TO BUILDERS.

Sealed proposals will be received by the undersigned until 7 P. M., Friday, April 20th, 1877, for the erection of a stone Barn for the Kansas State Agricultural College. Plans may be seen at my office and at the office of E. T. Carr, in Leavenworth, on and after Tuesday, the 10th inst. Separate bids will be received for the mason work including excavation. The right is reserved to reject any and all bids.

N. A. ADAMS, Secretary.

[Continued from first page.]

But high test kerosene, every where, costs more than low test. Gallon for gallon it costs more, but is it therefore more expensive? I was surprised at Grand Traverse to hear that "the high test oil not only costs more, but would not burn so long as low test." This statement was so opposed to known facts, that I determined to test it accurately. I took two exactly similar lamps filled one with high and the other with low test oil; weighed the lamps and oil; lighted them and kept the blaze at equal intensity, and after allowing them to burn side by side a certain time, I weighed the lamps to find how much oil each had consumed. While the high test oil had lost four ounces, the low test had lost five ounces. I have tried the experiment in many ways, both by measuring the amount of oil that was consumed, and by weighing the same, but always with the same result, viz.: the low test oils always burned away faster than the high test when the light was the same. The low test oil sells for 28 cents wholesale, and the best high test for 35 cents,—an increase of one-fourth; but the low test oil burns away one-fourth faster, so that measured, not by the gallon, but by the amount of light, the high test is as cheap as the low test.

SAFE OIL.

The most important question is, *What is a safe oil?* I think you will all concede that *oil that will bear our test* IS SAFE. For nearly two years in which our test has been enforced not a life has been lost or a serious accident occurred by the use of such oil. Will a lower grade of oil be equally safe? Most emphatically, NO! Will 120° oil be safe enough for common use? Ninety-nine persons may use it without accident, but the hundredth man may have an accident and go up in a chariot of fire. In estimating the degree of safety required for any oil in general use, we must consider the accidents which are liable to happen: chimneys will break or fall off, lamps will break by dropping and otherwise, and we must have an oil that will be safe when such accidents occur. The brass fittings of lamps become heated, and when the oil is splashed against the heated parts, explosive vapors will form if the oil is of low test. Accidents are very liable to occur when the lamp is partially empty and is carried in the hands. The following case will illustrate how such accidents most frequently occur:

The *Dubuque Times* says that a lamp explosion occurred in a house in Fourteenth street in that city. A little colored girl employed in the family went to the kitchen in the evening to light the fire. She then took the lamp from the table and started to return to the sitting-room; and before she got out of the kitchen the lamp exploded with the force of a gun-shot, scattering fragments of glass all over the room. One piece struck the little girl on the cheek, cutting a gash nearly two inches in length, and deep enough to bleed profusely, and others tore the skin from the fingers of the hand which carried the lamp. Fortunately the light was extinguished by the bursting of the lamp.—*Baltimore Underwriter, Jan. 18, 1877.*

I have made many comparative experiments to determine the comparative safety of such oil as the people are petitioning for, and the oil that our laws now require. I have filled lamps with the "Michigan test oil" and others with "Headlight oil." These lamps were left to burn in a warm room for a time, and then broken without extinguishing the flame. With our oil the flame was either extinguished, or a long time ensued before the body of the oil took fire; with "Headlight" oil the flame rapidly extended to the oil and burned fiercely. I am satisfied by these direct experiments, where the conditions of an accident were as accurately reproduced as possible, that our "Michigan test" oil is far safer than any oil of a lower test.

[Concluded next week.]

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Inland Tribune. A Republican weekly newspaper, published at Great Bend, county seat of Barton county. $2.00 a year. 26-3m

Register, Great Bend. Daily and weekly. Only daily within 219 miles. A. J. Hossington, Editor and Proprietor. 22-3m

Record, Beloit, Kansas. A real-estate paper. 25 cents per year. Tells all about northwestern Kansas. Kelly & Bertram, Proprietors.

Advance, Sabetha. Only democratic newspaper in northeastern Kansas. Published every Saturday. $1.50 per year. E. A. Davis, Editor and Proprietor. 26-3m

Expositor. Concordia. Only home paper in county. Large circulation. Large patronage. Independent. $1.00 a year. J. S. Paradis, Editor and Proprietor. 33

News, Girard, Crawford coumty. A Democratic weekly paper published at the county seat of Crawford county, $1.50 per year. Tipton & Lamoreaux, Editors.

Chronicle, Abilene. Six large pages. Large circulation. Republican. $2.00. Send for specimen copy, and learn all about the famous wheat-growing belt of Kansas. 28-3m

Examiner, Hutchinson. An independent, Democratic newspaper. Published every Friday. Official paper of city and county. $2.00 per annum. Wm. J. Turpen, Proprietor. 22

American Young Folks, Topeka An illustrated monthly paper for boys and girls. Fifty cents per year. Sample copy free. Address, American Young Folks, Topeka. Kas.

Kansas Churchman, Topeka. Organ of the Episcopal Church in Kansas. Edited by Revs. H. H. Loring, A. Beaty, Paul Ziegler. Eight pages; monthly. Fifty cents per annum.

New Century. The temperance paper of Kansas. Published at Fort Scott. Weekly, at one dollar a year. Rev. Jno. Paulson and Jno. B. Campbell, G. W. C. T., Editors. Sargent & Co., Publishers. 47-3m

Independent, Minneapolis, Kansas. Established 1871. The oldest, largest and cheapest paper in the beautiful Solomon Valley. Price $1.50 a year. Politics, independent but not neutral. W. Goddard, Publisher. 43-3m

Press, Wellington, Sumner county. A live, Republican journal. Is well patronized, and enjoys a large home circulation. John H. Folks, Editor. Folks & Bishop, Publishers. Subscription price, $2.00 per year. Advertising rates furnished on application. 26-3m

Home Record, Leavenworth, Kansas. Established in 1872. Is the organ of the Home of the Friendless, an Institution founded and controlled by the women of the State of Kansas. Circulation, 3,200. No better medium for advertising in this section. Mrs. C. H. Cushing, Editor. 44-3m

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. II. MANHATTAN, KANSAS, SATURDAY, APRIL 14, 1877. No. 52.

THE INDUSTRIALIST.
Published every Saturday by the
PRINTING DEPARTMENT.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.
Advertising rates made known on application.
Address A. A. STEWART, Manhattan, Kas.

Illuminating Oils in Michigan.

[A Lecture delivered before the Legislature of Michigan, January 25, 1877, by R. C. Kedzie, Member of the Board of Health.]

[Concluded from last week.]

WHY LAMPS EXPLODE.

Some persons seem to think that the explosion of a kerosene lamp is caused in the same way as a boiler explosion, viz.: By the pressure of the vapor of the oil inside the lamp. In rare instances explosions may be caused in this way; for example, where the ignited oil overflows the lamp and the lamp is enveloped in flame. But explosions usually occur in another way, viz.: Where the vapor of kerosene is mixed in proper proportions with air, and thus a *true explosive mixture is formed* which will explode with the force of a gun-shot, when fired by a flame. This explains why a lamp is in more danger of exploding when only partially filled with kerosene, because a larger amount of space is filled with the explosive mixture; it is the same as a large load of powder in a gun.

Many persons suppose that there can be no danger of a lamp explosion unless the whole body of the oil in the lamp is heated to the flashing point; that because the temperature of our rooms never rises to 120°, there can be no danger in using oil whose flashing point is 120°. But Dr. Baker, Secretary of the State Board of Health, has proved by experiment with lamps, that an explosive mixture may form and the lamp may explode while the body of oil in the lamp is not above 85° F. The temperature of the body of oil in the lamp is not the only factor to be considered, because different parts of the lamp become very unequally heated. If you will touch the brass collar of a lamp which has been burning for some time, you will find it quite hot, and the tube supporting the wick is still more strongly heated. *The formation of vapor will be determined by the hottest part of the lamp which comes in contact with the oil.* When the combustion is imperfect from any cause, the brass fittings of the lamp become excessively heated. Dr. Baker found in his experiments that, when the chimney was removed and the lamp continued to burn, the temperature of the brass collar rose very rapidly in every instance; in one case, in 14 minutes, it rose to 161° F., and in another case to 161° F. In this last instance very rapid explosions occurred by the side of the wick, and to prevent the whole lamp from exploding the light was extinguished. *In none of these experiments did the temperature of the body of the oil rise above 85°* F. Many persons on leaving a room will "*turn down the lamp*" to save oil, but such economy is very liable to cause a lamp explosion, which is anything but economical. I know of a case in Charlotte which illustrates the danger of this practice: A lamp in a store was turned down during the absence of the clerk, a person passing saw the lamp explode, and by promptly breaking open the store he extinguished the fire. If a light is not needed in a room, either extinguish the lamp or leave it burning with the usual blaze.

METHODS OF INSPECTION.

Permit me to call your attention to the methods of inspecting oil, and to explain why such different results are reached by Michigan and Ohio inspection. Many persons are puzzled to know why oil that will pass Ohio inspection at 150° will only bear Michigan inspection at 120° or even 115°. This discrepancy is to be explained by the difference in construction and use of Michigan and Ohio oil-testers. In all oil-testers, so far as I know, the oil to be tested is heated in a water-bath, and the temperature of the oil is measured by a thermometer whose bulb is just covered by the oil. In these respects the oil-testers of both States agree. In the Ohio tester—what is called "the commercial test"—the oil fills the containing vessel brimful, and there is no screen or covering to prevent the escape of the vapor as it forms; the least movement of the air tends to dissipate the vapor. Moreover, the vapor of kerosene is more than twice as heavy as air, and when it forms it tends to fall down the sides of the vessel, and will not accumulate in large quantity over the oil unless it escapes quite rapidly, becoming heaped up on its surface. If a lighted splinter be passed rapidly over the oil half an inch, an inch or more above its surface, it may fail to ignite the vapor even when it is escaping freely from the oil. The distance above the oil at which the lighted splinter must be passed is left entirely to the judgment of the operator, and hence the results of inspection are largely within his control; if he wants it to pass a high test he has only to raise his lighted splinter higher above the surface of the oil, or dash it past the surface more rapidly.

In the Michigan tester, a sample of which is before you, these sources of error and uncertainty are avoided by a *vapor chamber* over the oil. This chamber is one inch deep, and is covered with a copper plate, so that the heavy vapors cannot escape. When a lighted match is passed into this vapor chamber, if vapor is present in sensible quantity, a flash will reveal its presence. *This vapor chamber represents the space inside a lamp which is not filled with oil.* An oil which will flash at a given temperature in this vapor chamber, will explode at the same temperature in a lamp if flame be applied, because the flash in the vapor chamber is an explosion. The flashing temperature of an oil in our tester represents the exploding temperature of the same oil in a lamp under favorable circumstances. To show more clearly this relation of the vapor chamber in our tester to the empty space in a partially filled lamp, Dr. Baker has constructed a water-bath and used this lamp (which has a side opening for filling the lamp) for an oil-tester. If the lamp is partially filled with oil, a thermometer placed in the oil through this opening for the wick, the whole placed in this water-bath to heat it, and then a lighted match passed into the empty space of the lamp through this side aperture, we have all the conditions of our Michigan oil-tester, and the oil may be tested in this apparatus the same as in our oil-tester. You thus see that the empty space in this lamp represents the vapor chamber in our oil-tester. We often speak of this part of the lamp as empty. It is not empty, but filled with a mixture of vapor of the oil and air, and if these are present in the right proportions, they will explode in the lamp the same as in the oil-tester.

Since the Michigan tester prevents the escape of the vapor as it forms, and since the lighted splinter must be plunged into the space where the vapor is, our tester will mark a much lower temperature of inspection than will the Ohio tester. Oil that will bear our test of 140° will usually pass Ohio inspection at 175°. Our method of testing is much more accurate, the results are less within the control of the operator, and it bears an intimate relation to the actual conditions of a lamp while burning. It has reason and fitness, whatever the Ohio method has. Cleveland inspectors confessed that their method was too largely within the control of the inspector, but "the Michigan tester is the most accurate instrument yet invented,—you cannot make it vary more than a degree or two." When the oil dealers rail at our "close tester," you must remember that its crying sins are that it is *accurate, unvarying, and indicates the limits of safety of oil when used in a lamp!*

PETITIONS FOR A CHANGE IN OUR LAW.

It is stated that a large number of petitions have been presented to the Legislature asking for a change in our law, and a reduction of the flash test to 120°. I well know how sacred you hold the right of petition, and how anxious you are to know what are the real wishes of the people of this State. But I fear that the people who are clamoring for this change have been misinformed and deceived by those who are pecuniarily interested in a change of our law. I am satisfied that the change demanded will not necessarily remove the evil complained of; that the reduction of our flash-test, without some provision which shall exclude the large amount of paraffine oil which adulterates most of our "State oil," will still leave our people open to impositions of a most outrageous nature, which will lead them to demand a still greater reduction of our test; but if we shut out this paraffine adulteration, there will be no trouble about the quality of our oil. At the demand of the oil men, the test, two years ago, was reduced 10°; but have we had any better oil for the change? It is worse than it was before the change.

[Concluded on fourth page.]

THE INDUSTRIALIST.

SATURDAY, APRIL 14, 1877.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

63 and 30.

Because of the fact that the Agricultural College, being designed for the education of the working classes, gives instruction and practice in farm operations and the mechanical trades, there is a tendency to overlook the extent and value of the instruction given in those branches of knowledge which are usually taught in colleges and universities.

Then, again, there are in the State some of those high-stepping and majestic beings, whose clay being of a finer quality than that used in the construction of ordinary mortals, are disposed to look with aversion upon any attempt to give an education to the boy or girl, who is to earn a living by manual labor, that will be as useful in the performance of that labor as is the ordinary education supposed to be useful to the lawyer. And these silver-plated sons of fortune, mistaking their self-conceit for knowledge of the facts, occasionally pronounce the awful sentence that any college which fails to teach classic lore will fail to give a valuable education. It is a little singular, by the way, that upon investigation it will be found that these utterances are largely affected by local or personal interests.

During the present term, each of our students recites in at least three of the following studies of the Farmer's or Woman's Course, which for convenience are given in alphabetical order: Algebra, Analytical Chemistry, Book-keeping, Butler's Analogy, Chemical Physics, Constitution U. S., Drawing (industrial), Drill in Arithmetic, Drill in English, Engineering, Geology, Household Economy, Landscape Gardening, Mental Philosophy, Meteorology, Physical Geography, Physics, Political Economy, Practical Agriculture, Practical Horticulture, Surveying, and U. S. History. And, in addition, each student recites in at least one of the following industrial classes: Blacksmithing, Cabinet-making, Carpentry, Carving, Instrumental Music, Painting (industrial), Printing, Scroll-sawing, Sewing and Dress-making, Telegraphy, Turning, and Wagon-making.

Three-fourths of the time is devoted to literary and one-fourth to industrial studies. And we have no hesitation whatever in saying that the knowledge obtained by our students, of the several branches is as thorough and practical as that imparted anywhere; and, for that matter, a good deal more thorough.

The grade sheet for the past month is the most satisfactory one we have yet had. Students standing between 95 and 100 are in the first rank; those between 90 and 95 are in the second. The grades are made on the daily recitations and on a written monthly examination. During March sixty-three (63) per cent of our students were in the first rank and thirty (30) per cent in the second; that is, ninety-three (93) per cent graded over 90. The grading is as rigid, in fact more rigid, than heretofore. We ask for no better evidence of the assiduity of our students than the above figures. And for usefulness to the working classes of Kansas, we rather fancy that the knowledge taught is as valuable as that of foreign languages deader than Julius Cæsar.

Tame Grasses Again.

We wish that every one who still holds to the antiquated notion that the tame grasses will not grow in Kansas, could see the fourteen odd acres of handsome blue-grass and timothy meadow that adorns the College farm. We have been told by we don't know how many people that timothy and blue-grass would not grow in Kansas, and we confess that during the dry seasons of 1874–5 our faith was severely tried. But now we have a field of ten acres, seeded to timothy in the fall of '75 and dusted with blue-grass seed the spring following, which is nearly covered with a most perfect turf. One week ago we measured single blades of blue-grass growing upon this field which were six inches in length, all of this season's growth.

Again, late in May of the spring of '76, we sowed upon two acres of well prepared land equal parts of orchard grass, timothy and blue-grass. It all germinated and grew, and now the piece looks like an old meadow.

The tame grasses will grow in Kansas, especially blue-grass, orchard grass, timothy and alfalfa; but you cannot grow these plants without good seed, well prepared land, and an average amount of rainfall during the season.—[*Prof. Shelton.*

Protect Newly Planted Trees.

We are now just in the midst of tree-planting season. The success of orchardists who had trees old enough to bear last year, has given a marked impetus to tree-planting this spring; and probably more trees will be set within twenty miles of Manhattan this spring than in any previous year. We would like to offer a few suggestions to those who may have purchased trees either of us or others. We should permit no carelessness in the planting of trees, whatever may be the pressure of other work, for there is nothing that shows the effects of haste or carelessness sooner than trees. When once carefully planted, there are many reasons why trees should be thoroughly protected.

It may seem like an unnecessary expense to spend time just now to protect trees; and yet such a protection as we here name will be almost invaluable, especially this season. We urge the tieing up of all the trees with straw, hay or other material, as high as it can be conveniently done. This should be done as soon as the trees are set and will serve to protect the bodies of the trees; and if they are defoliated, as they may be in part, it will ensure them against sun scald and that much-dreaded pest of the young orchard — the borer. It is probable that we shall be more than usually liable to suffer in this direction this year. Besides, if this hay or straw is carefully tied on to the trees, it may remain without injury two years, thus making an effectual protection against the rabbits. Unquestionably, a man has a right to set out his orchard, prune and care for it as he pleases; but he should not complain if he neglects the rules of protection which the climate of Kansas must in time suggest to us all.—[*Prof. Gale.*

State Grange.

We find in the minutes of the State Grange, as published in the *Kansas Farmer*, the following action respecting the Agricultural College. A large committee made a very thorough examination of the Institution and unanimously presented the following report which was unanimously adopted by the State Grange:

We, your committee appointed to visit the Agricultural College, at Manhattan, do respectfully report:

That we have given the College as thorough an examination as the time at our disposal would permit. We think the appropriations made for the College last winter have been judiciously expended, and the buildings erected therewith substantial and well adapted to the purpose for which they were constructed.

We find the farm not only self-supporting but returning an income of $1,250.90 for the past year. An account has been accurately kept against each crop raised on the farm, a full exhibit of which was shown us by Prof. Shelton.

From the statement of President Anderson, we find the Institution practically out of debt, interest due on land sold more than balancing the amount the College owes. The amount received from the sale of College lands constituting the endowment fund, is now about $20,000 per annum, and is applied to the payment of the President and Faculty.

We find the course of instruction used in the College to be eminently practical — theory being united with practice — though the time which can be devoted to the latter is necessarily limited; and we are of the opinion that the tendency of such an education is more likely to lead the pupils to the adoption of agriculture and industrial pursuits than that usually adopted in other high schools and colleges.

As to further appropriations from the Legislature, your committee think that a barn is all that is needed for many years.

Respectfully submitted.

J. K. MILLER, *Chairman.*

THE rainfall in Kansas in 1876 was 44.13 inches — more by 5.57 inches than is recorded for any previous year, and 11.10 inches greater than the average annual amount for the eight preceding years.

THE INDUSTRIALIST.

SATURDAY, APRIL 14, 1877.

TIME-TABLE OF THE K. P. RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:02 A. M.
Going West..... 5:46 P. M.

FREIGHT ARRIVES.

Going East..... 10:35 P. M., and 5:25 P. M.
Going West..... 5:40 A. M. and 7:20 P. M.

Passengers with tickets are carried on freight trains between Topeka and Brookville.

GEO. C. WILDER, Agent.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending April 13th, 1877.

DAY OF WEEK AND MONTH.		Temperature. Max.	Min.	Mean.	Bar. Mean	Hight.	Inches of Rainfall.
Saturday	7	55°	45°	52°.25	28.36		.40
Sunday	8	58	32	50 .25	28.52		
Monday	9	59	35	47	28.59		
Tuesday	10	50	41	47 .50	28.79		
Wednesday	11	55	38	50 .50	28.77		Sh'r
Thursday	12	59	40	51 .25	28.72		
Friday	13	67	38	56	28.79		

Average temperature for the week, 50°.68.
Range of temperature for the week, 35°.
Rainfall for the week, .40 of an inch.

Manhattan has a hat manufactory.

Five weeks more, and good-byes will be in order.

The peach and plum trees in the College orchard will be in full bloom in a few days.

We heard Prof. Gale say the other day that the prospect for an abundance of fruit this year was very flattering if—oh, those wicked Caloptenuses.

Among the many very choice plants and shrubs in the horticultural building, is a cherry tree one year from the graft which is covered with blossoms.

From the Hoosier Drill Company, Milton, Indiana, the Farm department has received for trial one of their excellent corn drills. Much obliged, gentlemen.

The storm last Saturday prevented the Webster Society from holding its regular session. This accounts for the non-appearance of the weekly report of its proceedings.

On account of the rain last Saturday, the auction sale of College nursery stock did not take place, but was postponed until this afternoon when the remaining stock will be sold.

Tom Morgan, the efficient foreman of the College farm, is plowing the land west of the mechanical building, and says he is going to sow oats there. We hope he won't reap grasshoppers.

The Farm department shipped this week, to the Nebraska State University, fifty-one sorts of Kansas-grown potatoes. These varieties are to be tested experimentally upon the farm of the University.

Stanley M. Ward, nephew of Prof. Ward, has returned to his old home in Ellenville, New York. Mr. Ward has attended this Institution during the past year, and has proved himself a very studious and energetic young man.

This issue of the INDUSTRIALIST closes the present volume, and very many of our subscriptions expire at this time. We advise all who desire to take the paper the coming year to send in their names and the "collaterals" immediately, for we stop the paper at the expiration of subscription.

How is this for a photograph of G. H. Opper, Esq.: "In stature he is about a match for the six-penny stub nail, in form he is like unto a lynch-pin, and he wears a sealing-wax head on him and a pair of glass eyes, so that with his long-tailed duster on he looks like an unsophisticated and near-sighted school-master."

Prof. Ward went down to Lawrence on Thursday morning, to attend the State Sunday School Convention and Institute which is now in session at that city. Dr. J. H. Vincent, of New York, and Mrs. George Partridge, of St. Louis, are in attendance; and the grandest Sunday School meeting ever held in the State is now in progress there.

We have tested two loaves of bread baked at the Laboratory by members of the class in Household Economy. The one was made by Miss Carrie King and the other by Miss Mattie Kimble. For the life of us we can't say which was the better, as both were in every respect first-class. We congratulate the young ladies on their skill, as also will their future husbands.

The many friends of Miss Kate Ward were quite surprised this week to learn of her marriage, at the St. Nicholas Hotel, New York City, to Mr. W. N. Burt, of Scranton, Pennsylvania. Miss Ward spent the major part of the years 1875–6 in Kansas and Colorado for the improvement of her health. We presume she has now procured a balm for every ill, and we extend our congratulations.

Two of our students who went home this week took with them a very fine walnut extension table, which they have made the past winter during their "off hours." They have been enrolled in the carpentry class, have practiced one hour each College day, and have probably gained as much useful knowledge, and carried away as substantial proof of the value of their winter's work, as they would had they plodded through a few books of dead languages.

Several new offices have been put in on the telegraph line during the past two weeks. Most of the students in the Telegraph department are now far enough advanced to work on the line. The offices and calls are as follows:

Lewis	K.
Winder	W.
Wilson	WI.
Eckman	CK.
President's House	A.
" Office, Barn	CA.
Mechanical Building	F.
Anderson, Bernhard	AN.
Humphrey	HU.
Ulrich	U.
Superintendent's Office	WS.
Blain	B.
Hughes	H.
Post-Office	PO.
Hibbard	HI.
Glossop	G.
Johnson	J.
K. P. Depot	MN.
Wilder	BN.
Hoyt	Q.
Pillsbury	PR.

Last Friday the Alpha Betas transacted some miscellaneous business and listened to the reading of the *Gleaner*, which was a rare literary document edited by Miss Gracie Parker, after which the Society convened as a court to try the renowned breach of promise case of Winnington (Miss Neale) *vs.* Murray (Griffing). The charges preferred by plaintiff were that the defendant had entered into a solemn contract of marriage with said plaintiff, and had openly and unscrupulously violated said contract; and in consequence of which the delicate heart-strings of said plaintiff had been sorely lacerated, her social standing seriously affected, and her mental and physical constitution distorted and wrecked; and for said damages she prays the court to allow her $10,000. The ground taken by the defense was that, although the defendant had entered into a marriage contract with the plaintiff, the conditions of said contract had never been broken by the defendant, and that he had been and was still willing to perform his part of the compact.

The evidence given by the witnesses for the plaintiff was exhaustive and well compiled, while that given by the witnesses for the defense was remarkably clear and decisive. The witnesses testifying for the plaintiff were Isabella Winnington, McConnell, Miss Humphrey and Ward; those for the defense were Wake, Miss Willey, Humphrey and David Murray. The witnesses were rigidly cross-examined by the attorneys with only meager success in helping them to bend the truth. Owing to lack of time, the case was not concluded, and the court was adjourned for one week. when the attorneys will make their pleas and the case will be forever settled.

Next Friday is anticipated with unusual anxiety as, in all probability, this will afford the last opportunity for "our seniors" to display their legal lustre in the Society; and it is expected that law and justice will be meted out in wholesome doses.

D. A. Z.

The road through the College farm has been greatly improved. It is almost wonderful to see the amount of work that has been done at this State Institution during one or two seasons past, considering the means they have had.—[*Nationalist.*

"Morazin" contributes the following College items to this week's *Enterprise*:

There were two new offices established on the College telegraph line last week.

Prof. Kedzie has consolidated his classes in Physics, and the class now recites at the second hour.

The farm can boast of the best looking piece of rye west of town. It bids fair to make an excellent crop.

The corn stalks are all cut and preparations have been made for a grand spring campaign, to commence as soon as the weather becomes settled.

There have been some extensive improvements made on the farm this spring, in the way of building fence, trimming hedge, grading around the buildings, etc.

TO BUILDERS.

Sealed proposals will be received by the undersigned until 7 P. M., Friday, April 20th, 1877, for the erection of a stone Barn for the Kansas State Agricultural College. Plans may be seen at my office and at the office of E. T. Carr, in Leavenworth, on and after Tuesday, the 10th inst. Separate bids will be received for the mason work including excavation. The right is reserved to reject any and all bids.

N. A. ADAMS, Secretary.

[Concluded from first page.]

I am satisfied that the oil men are at the bottom of this movement. The agents of the refiners are circulating printed forms of petitions in many parts of our State. Here is a printed form which the agent of the Standard Oil Co. was circulating in Jackson. I would like the committees on public health to compare this form with that of the petitions now in their hands and see if I am not correct in my suspicion that this "uprising of the people" has its headquarters in Cleveland. If the oil men have adulterated our kerosene beyond all endurance, have persuaded our people that such adulterated oil will not burn because of our high test, have printed and circulated among the people blank forms of petitions asking this reduction in our test, and by their misrepresentations have induced large numbers of our people to sign such petitions, like David of old you may well ask such petitioner, "Is not the hand of Joab with thee in all this?"

In the olden time a woman with sublime audacity appealed from Philip drunk to Philip sober. I appeal from the clamor of a people misinformed and misguided to the sober sense of this Legislature. Do what you feel will best subserve the public good and your constituents will receive you with the plaudit, "Well done, good and faithful servants."

CHANGES IN THE PRESENT LAW.

There are a few changes which seem to be desirable in our present law:

1. Abolish the fire test but retain our present flash test of 140°.

2. Reject all oils which contain much paraffine; for example, all oils that do not remain clear and transparent when cooled down to 20° Fahr. for ten minutes.

3. Make it a misdemeanor for any person to use uninspected oil.

4. Make it a misdemeanor for any dealer to sell empty kerosene barrels or casks before canceling the inspection brand.

5. Make the dealer responsible for the acts of his clerks and employes in selling illuminating oil.

6. Make it the duty of the Governor to remove from office any State inspector who is unfaithful in the discharge of the duties of his office, and to appoint a competent person in his place.

Wood Carving for Women.

The interest now awaking in decorative art is an indication of real esthetic progress. Heretofore, we have been absorbed in mechanical rather than artistic advancement. We have invented much but adorned little, and in the art of household architecture and decoration we are an age behind the humblest European dweller. The Swiss peasant carves his chatlet into a miracle of beauty, and the influence of European decorative art was largely increased by the intermingling of transatlantic nations with ours at the Centennial. Mr. Salvisburg says the future of wood carving should not lie in the nature of useful ornaments or commonplace toys, but apply its skill to the production of furniture and paneling. Such articles finished with care would find a market in all opulent towns.

It is easy to see what the effect of this new art will be upon the lives of working-women. A few years since, it was unknown in Cincinnati. Now twelve women support themselves by this work. Mr. Pitman, of the Cincinnati school of design, gave free tuition in this art, and awakened an enthusiasm for it. The outlay is merely nominal. The tools cost little. Any cabinet store furnishes material at a small cost. An artistic ability to design, though desirable, is not indispensable in this art. It has the advantage of speedy results. In one term of lessons — about twenty — the pupil begins to exhibit his power. The demand for this work will steadily increase and command high prices. From cornices and panelings, from church, library and parlor furniture to cabinets, paper-holders, brackets and other ornaments, nothing can equal the artistic hand carving. Now, let the average woman take possession of this dainty handicraft, and not rush into the high and holy work of a teacher when she has no inner capability for the work, or starve over a sewing machine, but seize the tide of a new and desirable work, and in a new and congenial means of self-support carve out, not decorations alone, but also a fair and beautiful success in life.—[*Indianapolis Journal.*

KANSAS PRESS.

As an expression of our appreciation of the kindness shown to the INDUSTRIALIST by the Kansas press, we will insert gratis, for at least one month, a three-line nonpareil advertisement of any paper furnishing the copy therefor.

Record, Beloit, Kansas. A real-estate paper. 25 cents per year. Tells all about northwestern Kansas. Kelly & Bertram, Proprietors.

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New Century. The temperance paper of Kansas. Published at Fort Scott. Weekly, at one dollar a year. Rev. Jno. Paulson and Jno. B. Campbell, G. W. C. T., Editors. Sargent & Co., Publishers. 47-3m

Independent, Minneapolis, Kansas. Established 1871. The oldest, largest and cheapest paper in the beautiful Solomon Valley. Price $1.50 a year. Politics, independent but not neutral. W. Goddard, Publisher. 43-3m

Home Record, Leavenworth, Kansas. Established in 1872. Is the organ of the Home of the Friendless, an Institution founded and controlled by the women of the State of Kansas. Circulation, 3,200. No better medium for advertising in this section. Mrs. C. H. Cushing, Editor. 44-3m

Mechanical Department.—Regular instruction and practice in Carpentry, Cabinet-Making, Turning, Scroll-Sawing, Wagon-Making, Blacksmithing and Painting.

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Has quickly taken a high place among agricultural journals.—*N. Y. Tribune.* It has been conducted with energy and ability, and we have considered it among the best of our exchanges and a worthy representative of the West.—*Philadelphia, Pa., Practical Farmer.* Our Kansas friends should feel much pride in the high character and sterling worth of their State agricultural paper.—*National Live Stock Journal.* I like the KANSAS FARMER very much, and as early as my present engagement will permit I shall esteem it a pleasure to write for you on the terms you propose.—*Jos. Harris, of Moreton Farm, author of "Walks and Talks."* I read your FARMER with deep interest.—*Wendell Phillips.* Bears unmistakable evidence of the proverbial energy and enterprise of the West.—*Golden Era (Ill.)* Master M. E. Hudson, of the State Grange, says: "I never forget to mention the KANSAS FARMER as being worthy the support of all patrons."

THE AMERICAN YOUNG FOLKS, the best and cheapest Boys' and Girls' paper published. Fifty cents per year. Copies of both papers sent for 3 cent stamp. Address J. K. Hudson, Topeka, Kansas. 38-3m

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial Pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; in Book-Keeping and Practical Law. Words, numbers and lines are the tools used by all industrialists in conveying or preserving ideas; and our endeavor is to make the student a ready workman in the art of using these tools for practical purposes, rather than to make him a critic of fancy English or a professor of abstract Mathematics.

FARMER'S COURSE.

Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the Structure, Growth, and Value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, in the Wood and Iron Shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

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To Mechanics, in addition to the studies of the Farmer's Course, applied Mathematics and Industrial Drawing are more extensively taught. Besides this literary education, the student is taught daily in the particular workshop of his trade. Special advantages are thus offered to those who wish an education as a Carpenter, Cabinet-maker, Wagon-maker, Blacksmith, Turner, Carver, Engraver, or Printer. No charge made for the use of tools or material for class practice.

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The course of study for woman is more practical, and, therefore, more sensible than that found in any other institution in the United States. The studies are shaped with reference to the liberal and direct education of woman as a woman instead of as a man, and as an industrialist instead of a butterfly. Among the special features of the course are Physiology and Special Hygiene, Household Economy, Farm Economy, Gardening, Household Chemistry, etc.

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No contingent fees, except for use of pianos and organs in the Musical Department; and a charge of $1.00 per month for material and instruments used by male students in Printing and Telegraph Departments. Boarding ranges from $2.75 to $4.00 per week.

CALENDAR:—Winter Term began Thursday, January 4th, 1877, and closes May 23d, 1877.

For further information, apply to

J. A. ANDERSON, President.